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ORIENTATION GUIDE
On
Vocationalization of Education

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1. Vocationalization of Higher Secondary Education - A Historical Survey:

The roots of vocational education in India can be treated from the ancient vedic culture. There were several kinds of commercial federations in the country. Each of these federations practiced separated trade. The training of the trade and its technological knowledge were transferred mainly from the father to the son. This kind of education also descented from the teacher to the pupil. The pattern of technical education, during the mughal period, remained similar to that in the ancient period. But its pace gathered momentum due to state patronage. It was during the British period that the trade and commerce got a set back. Ancient Indian technologu was almost destroyed and those survived which became subservient to British interest. Only lukewarm efforts were made during the British regime to remedy these situation which did not yield much fruits. On the educational front too little attention was directed towards those areas of education and training which equipped one with the tools of earning one's livelihood.

For the first time in our country the attention of the government was drawn towards practical education by the Wood's despatch in 1854, It said "Our attention should be now directed to consideration, if possible still more important and one which hitherto, we are bound to admit too much neglected, namely, how useful the practical knowledge suited to every station of life, may be best conveyed to the great mass of people who are utterly incapable of obtaining any education worthy of the name by their unaided efforts: and we desire to see the active measures of the Government more specially directed for the future to this object, for the attainment of which we are ready to sanction a considerable increase of expenditure.

The problem of higher secondary education has been under constant review since then. The Indian Education Commission (1882) recommended "that in the upper classes of high schools (i.e. classes VIII-XI) there should be two divisions: one leading to the entrance examination and the other of a more practical character, intended to fit youth for commercial and non-literary pursuits". It was suggested that threr should be an alternative course, with us much diversification as possible which would make secondary education really terminal in character and divert students into different walks of life. This recommendation in practice took three distinct directions. The first was to creat an alternative examination to the matriculation, the second was diversify the secondary course itself with the introduction of a large number of practical subjects; and the third was to run alternative vocational courses for those who had completed the primary school.

But inspite of these efforts the basis objective of diverting students away from the narrow path leading to the university did not succeed. The reasons for this failure were the following:

1. There was very little demand from the students and the parents for the vocationa, practical or utilitarian subjects introduce in the Secretary School Curriculum. This was partly due to lure of the university which dominated the scene and partly to lack of adequate employment opportunities which could be considered comparable to those which a pass in the traditional matriculation or school final examination generally secured.

2. The vast majority of the secondary schools, partly because of the lack of this popular demand and partly because of the large expenditure needed to provide them, offered only that small number of subjects which were prescribed for university entrance. Only a few schools in practice provided the teaching of one or two additional subjects. Hence in effect the provision made for the teaching of subjects other than those recognised by the universities was extremely limited.

3. Even where these additional subjects were taught, the time allocated to them was so limited that a student did not get enough skills either to qualify himself for a job as a skilled or semi-skilled worker or to set himself up in some business or industry as a self-employment person.

Therefore, the enrichment and diversification of the Secondary School Curriculum remained largely a paper reform, and in practice the situation in 1947 was not materially different from that at the beginning of this century.

However, during the intervening period consistent recommendations have been made by committees and commissions in favour of vocationalization of education. Calcutta University Commission (1917) giving its comprehensive recommendations stated that the Government should creat new type of institutions called the intermediate colleges which would provide for instruction in arts, science, medicine, engineering, teaching etc. The intermediate colleges must be regarded as fulfilling a double purpose. In the first place it must provide training such as will qualify its students for admission to the university, in different facilities or in other institutions of higher or technological training. In the second place it must provide training suitable for students, who after completing the courses will proceed directly into various practical occupations. It may be noted here that after 50 years of this report an acho is found in 1964-66 Education Commission Report with much the same emphasis. As a consequence to the recommendations intermediate colleges were created in several parts of the country mostly for the first objective neglecting the vocational aspect of the recommendations.

Subsequently Hartog Committee (1929) and the Sapru Commission (1934) set up by the United Provinces inter alia deliberated on vocational education. While the Hartog Committee recommended diversified courses for diverting boys and girls to industrial and commercial courses at the end of middle stage, preparatory to special instruction in technical an industrial schools; the Sapru Committee was of the opinion that vocational studies should commence after the secondary stage i.e. after 11 years of education. In fact the main purpose of the latter was to find ways and means of solving unemployment problem through diversified courses at the secondary stage.

Wood-Abbott Commission (1936) examined certain problems of education specifically the vocational problems and made recommendations. It is as a result of this report that a network of polytechnics was created in the country. Writing about the reorganisation of vocational and industrial education it was recommended that the nature of vocational education should be determined by prevailing circumstances in view of multifarious needs of the place. Abbott in his report pnserved tjat as a matter of fact general education is but the counterpart of technical education. The latter is, however, incomplete without the former, and all the vocational subjects begin in general schools. Despite this similarly, the aims and means of both the types of education differ considerably.

Therefore, there should be separate schools for them. The report recommended the establishment in each province of Advisory Council for Vocational Education. The Council should appoint sub-committees dealing with education for engineering, the extile industries, agriculture, small scale and cottage industries and commerce. The sub-committees should be entrusted with the entire responsibility of organising vocational education and prescribing curricula for them in each province. The Commission indicated the formation of junior vocational schools after middle examination and senior vocational schools paralle to higher secondary or Intermediate examination. They also suggested part-time schools for further education of persons already in employment. The Report further recommended the establishment of a single polytechnic school where training in many vocations should be given, instead of special individual schools for the training in individually different vocations.

The Central Advisory Board of Education in 1944 in its plan of post war educational development in India commonly known as Sargent Report visualised High Schools of two main types - the Academic and the Technical. The Report also pointed out that there was an urgent need in India of what is called the part-time system in respect of technical and vocational education.

The Radhakrishnan Committee appointed in 1948 felt that a large number of intermediate colleges should be opened to direct the students to vocations at the end of class X or XII. The Report went on to say "the aim of these colleges would be to meet a variety of needs of our youngman and woman by giving a vocational bias to their courses by retaining at the same time their value in a system of general education as preparation for university course".

This was followed by the Secondary Education Commission also known as Mudaliar Commission in 1952. It stated "we want to bear in mind the principle already noted that the secondary education is a complete unit by itself and not merely a preparatory stage, that at the end of this period the student should be in a position, if he wishes, to enter into responsibilities of life and take up some vocations". It went on to recommend diversification of the courses at the secondary stage. The off-shoot of this recommendation was the creation of multipurpose schools. "A multipurpose school seeks to provide various types of courses for students with diverse aims, interest and ability. It endeavours to provide for each individual pupil suitable opportunities to used and develop natural aptitude and inclination in the special course of studies chosen by him".

Under this programme, in addition to core curriculum provision was also made for seven groups of electives, namely, Humanities, Sciences, Technology Commerce, Agriculture, Fine Arts and Home Science. Every secondary school was expected to provide for at least three steens. This experiment of Multi-purpose school did not succeed because of several reasons more important of which are indicated below:

1. Specialization begins too early in this scheme and children of the age of 13 or 14 are required to choose their future careers. This was contrary to world trends in secondary education which are in the direction of lengthening the period of general education and postponing diversification and specialization to the senior stage of secondary education.

2. As stated above 7 different streams should have been available to the students to choose at the IX standard. But in effect schools in general offered only two streams, the Humanities and the Sciences whereas the really vocational subjects-technical, commerce and agricultural streams were provided only in very few schools. Even those were provided the time allocated to them was so limited that a student did not get enough skills either to qualify himself for a job as a skilled or semi-skilled worker or to set himself up in some business or industry as a self-employed person. The enthusiasm with which the parents got their children admitted into these

streams soon withered away when to their disappointment they came to know that the professional institutions such as the engineering colleges, medical colleges agricultural colleges etc. would not give any preference to those children and they always preferred those who studies normal science courses. Naturally with dismay the parents had re-educate their children to earn higher secondary certificates in the desired streams to qualify for university admissions.

Added to these there were also complaints that curricula were overburdened. Dearth of good text books, ancillary instructional materials and lack of proper guidance services together with the most important and fundamental weakness the lack of qualified, properly trained competent teachers served as the severest bottlenecks for the success of the courses. Thus the diversification of the courses which were brought about by peripheral changes in the curriculum of institution of vocational courses in separate institutions did not materially alter the bookish and academic character of secondary education.

A reading of the foregoing makes it amply clear that except for the Sapru Committee and Mudaliar Commission, all other commissions and committees made cleary recommendations as to the duration of the school education that is a total 12 years and also emphasised the need for introduction of diversified courses at the intermediate or higher secondary stage.

The most emphatic statement was made by the Radha-Krishnan Commission on this issue and emphasised the pivotal role of the intermediate education.

There are a number of basic academic considerations which compelled the appointment of Kothari Commission to re-examine the educational system of the country to achieve the national goals and improve the standard quality of education in comparision with the international standards. These academic considerations deserve careful analysis

1. A major question that required to be answered was whether the student was mature enough to choose the type of education at the stage of class IX or [illegible] even at XI for certain professional and university courses.

2. Another question which arose was thether the secondary education should be in two stages namely the lower lower and the higher secondary stages. If it is to be in two stages whether it should be two years lower secondary education to be followed by one year of higher secondary education or whether it should be of four yearsduration one terminating at the end of class X and the other at the end of class XII.

3. One of the major aims of diversififying the courses as recommended by Mudaliar Commission was to make the higher secondary stage terminal. For the reasons stated earlier they, however, seldom became terminal.

4. The relevance of setting up of such a commission was considered very necessary by the Vice-chancellor's Conference 1962. The All Indian Council for Secondary Education in 1963, The State Education Minister's Conference in 1964. All the above conferences recommended unanimously that the school education should be of 12 year duration to be [illegible] followed by a three year first degree education. They felt this is not only desirable to improve the quality and standard of education in the context of international standards but for the proper economic and social development of the country itself.

It is in this context that the Education Commission (1964-66) popularly known as Kothari Commission was set up. If found that the diversification of secondary school curriculum since 1882 had not led to any concrate results; that the large list of subjects included in the curriculum remained on paper only; that contrary to world trends in secondary education, this diversification began specialization at too early a stage and that a fresh look at the problem was needed if any meaningful progress was to be achieved. The Comm note of the uncontrolled meaningless rush to universities especially after independence and a variety of occupati which are drafting university graduates do not require university education for the types of jobs they are po

On the other hand at a very appropriate stage if the students are diverted to a variety of courses of practical nature which would fit them to occupations which the society needs, the country's resources would be better spent on more useful endeavour. Therefore, the Commission recommended that many others had recommended previously during the past hundred years that a much proportion of students should be diverted to vocational streams along relatively similar number on a selective basis to pursue university education and several professional colleges. "A large variety of terminal courses should be organised, varying in duration from one to three years. They will include courses for the training of primary and pre-primary teahcers: courses conducted by the industrial training institutions for a large number of trades for which the completion of studies in class X is the minimum qualification; courses in agriculture and industry which will train the middle level of personnel needed; courses for training para-medical/health personnel; courses for secretary work; and courses in home science. It is such courses that will make secondary education mainly terminal".

The National Policy of Education Resolution (1968) accepted the recommendations of Education Commission. It particularly suggested the vocational courses to be "effectively terminal" and sufficiently diversified to cover a large number of vocations.

Endorsing the Policy Resolution, the Central Advisory Board of Education entrusted the task of preparing curricula for such courses to the NCERT and asked the NCERT to help State Governments in implementing vocational education.

The NCERT prepared a guiding document under the title of "Higher Secondary Education and its Vocationalization" (1976). The document asserts that "Vocationalization is a major transformation in education and cannot be achieved without important structural and functional changes in the whole set-up". Recommendations in the document concerned many vital issues such as flexibility in courses, nature of courses, admission and streaming, choice of vocations, time allocation teacher orientation etc.

The Union Minister of Education in his capacity as the President, NCERT appointed a National Review Committee popularly known as Adiseshiah Committee to review the above NCERT document. This committee touched upon nearly all the recommendations of the preceding document and gave detailed recommendations for introduction of vocational courses at the higher secondary stage, Its report was published as "Learning to do" (1978).

The Ministry of Education, Govt. of India simultaneously constituted 'the Working Group on Vocationalization of Education', the 'Report' of which was finalized in November, 1977.

It presented details in regard to the scheme of implementation and financial implications while giving its own set of recommendations which closely resembled those of the "Learning to Do", and its predecessor NCERT document.

A special session of Conference of Boards of a Secondary Education (COBSE) in September, 1978 recommended that "State Boards should review their courses in the light of the course patterns and other suggestions made in these reports (referring to 'Learning to Do' and the 'Working Group Report on Vocationalization of Education') to suit the needs of the community".

The Vocationalization of Higher Secondary Education in the +2 pattern of schooling was introduced in different States of the country since 1976. The National Seminar on Vocationalization of Education (March 1979) in which various States and concerned officials from the Ministry of Education and Planning Commission participated took stock of the situation.

During the years 1976 to 1979 six States and two Union Territories implemented the scheme. The path followed by them through returning from the same set of national recommendations, varied a great deal in terms of administrative set-up, course identification, selection of institutions, curriculum design, teacher selection and training and various other aspects of vocationalization.

The wide gap between objectives and realization as well as the implementations lapses were highlighted by the report on "Vocationalization of Post-Secondary Education - A Critical Study of Implementation in the States" (1981).

The National Seminar on Vocationalization of Education (1981). took stock of the developments, successor and failures and identified the points of strengths and weaknesses. On the basis of the past experience the seminar outlined a set of fresh guidelines for proper remedial course action. A National Orientation Workshop on Vocationalization of Education was conducted at the Regional College of Education, Mysore (November 1983) for the States which have 10 + 2 pattern of education but have not yet introduced vocationalization. The States of Bihar, U.P., Sikkim, Tripura, Kerala, Assam, J & K, and Orissa participated in the programme.

The National Seminar on Vocationalization of Education (1984) reviewed the Progress made by different States/agencies in implementation of Vocationalization. The Seminar conducted at the threshold of the Seventh Five Year Plan evolved future directions and guidelines for better implementation of the Programme by all States and Union Territories.

The Report of the Working Group on Secondary Education - Seventh Five Year Plan has made the following recommendations:

i. In view of the importance of linking education with productivity, a major impetus has to be given in the 7th and the subsequent Five Year Plans to vocationalisation of higher secondary education. The schools have therefore, to be encouraged to introduce vocational stream in the +2 state on a large scale. As far as possible +2 stage should have vocational courses related to local needs.

ii. Facilities of vocational education at the +2 stage should be suitably diversified to cover a large number of fields such as agriculture industries, trade and commerce, medicine and public health, home management, arts and crafts, secretarial training, enterpreneural training etc.

iii. In designing vocational course, the schools should keep in mind the regional needs and local employment opportunities.

iv. More courses which have a relevance to rural needs, for example those dealing with agriculture and allied sectors, should be introduced.

v. The vocationalized courses should not be terminal in the sense that a student is unable to go for higher education; but at the same time, the vocationalization should be of adequate level to ensure that the skill obtained will be of meaningful help and use in

vi. The vocationalisation programme should be enlarged further in scope so as to include practical training and also to ensure that an adequate level of skills is imparted.

vii. Suitable instruction material for the programme should be developed based on vocational survey and regional manpower syrveys.

viii. Minimum qualification for recruitment to the services in Government and public sector undertakings should be so modified that wherever possible preference is given to those completing the vocationalised stream.

ix. On the lines of All India Board of Vocational Education, Boards of Vocational Education may be set up in each State to suggest programmes of vocationalisation and coordination between the various vocational/professional interests such as trade and industry, government departments, public undertakings and other employing agencies.

x. More central assistance may be given for introduction of programmes of vocationalised education for enlarging the coverage of the programmes. Vocationalisation may be introduced in 400 schools per year on 100% centrally assisted basis i.e. 2000 schools or 4% of the total during the 7th Five Year Plan.

xi. An important component of the proposed centrally sponsored scheme should be reorganisation of the Directorate of School Education and the setting up of special cells in the State Education department for monitoring the implementation of the programme of vocationalisation of education.

PRESENT POSITION ABOUT VOCATIONALIZATION OF EDUCATION:

1. Already the following States and Union Territories have introduced vocationalizations at the +2 stages:

STATES

1. Andhra Pradesh
2. Assam
3. Gujarat
4. Haryana
5. Karnataka
6. Kerala
7. Maharashtra
8. Tamil Nadu
9. West Bengal

UNION TERRITORIES

1. Andaman & Nicobar Islands
2. Delhi
3. Pondicherry

Besides, Orissa has made necessary preparations for its introduction in the year 1984-85. U.P. is preparing to introduce commerce Vocational Courses from 1985-86.

2. So far 131 districts have been covered under District Vocational Survey programme under the central assistance.

3. There are more than 115 vocational courses already offered in various States and UTs under the higher secondary vocationalization programme. There are from 5 major vocational areas of agriculture,

commerce, home science, health and para-medical and technical along with some courses of miscellaneous nature.

4. The All India Board of Vocational Education has been constituted under the chair-personship of Union Education Secretary.

5. An inter-ministerial national level Steering Committee on implementation of the programme of vocationalization is functioning under the chair-personship of the Union Education Secretary.

6. An apprenticeship scheme by the Ministry of Education with a provision of Rs.200/- p.m. for a period of 6 months is in operation cover 3000 students of vocational streams through the country on an annual basis.

7. Many other steps are being contemplated by Government of India for providing necessary thrust to this programme. These include :

   (i) Introduction of vocational courses of 2 years duration in polytechnics for which certificates will be awarded.

   (ii) Amendment of the Apprenticeship Act to cover students of the +2 vocational streams.

   (iii) Setting up of model +2 vocational institutions such as Demonstration Schools of NCERT, selected Kendriya Vidyalayas and others for demonstration purposes for proper adoption of the programme by various States.

(iv) Bringing vocationalization programme under the coverage or centrally sponsored schemes for the remaining part of the VIth Five Year Plan and the VIIth Five Year Plan by providing adequate resources for administrative, research and developmental support for extending the programme in one vocational higher secondary institution per district per year of the plans.

(v) Under the auspices of the Steering Committee on Vocationalization steps are being taken to obtain the manpower needs under various central ministries and public sector undertakings and the utilisation of available facilities under these for the extension of these information/ facilities to be utilized by States for vocationalization programme. The State Governments have been requested to pursue this line of approach also. This is to supplement the strategy of conducting district vocational surveys.

(vi) In order to provide major thrust in the area of vocationalization NCERT's departments/ RCEs are being suitably strengthened. NCERT is making intensive efforts to prepare vocational curricula and instructional materials for the existing vocations which are very popular as well as for some of the emerging vocations.

VOCATIONALIZATION OF HIGHER SECONDARY EDUCATION

NUMBER OF INSTITUTIONS, RUNNING VOCATIONAL COURSES AT THE + 2 STAGE AND EMPLOYMEN

Sl.No.	STATE/U.T.	YEAR OF COMMENCEMENT	NUMBER OF INSTITUTIONS (1983-84)	ENROLMENT (1983-
1.	2.	3.	4.	5.
1.	Andeman Nicobar Island	1981	NIL	N.A.
2.	Andhra Pradesh	1979	107	3310
3.	Assam	1983	5	50
4.	Delhi	1977	15	734
5.	Gujarat	1981	68	3701
6.	Haryana	1983	22	1920
7.	Karnataka	1977	109	4450
8.	Kerala	1983	21	810
9.	Maharashtra	1976	250	10508
10.	Pondicherry	1978	7	295
11.	Tamil Nadu	1978	N.A.	30000
12.	West Bengal	1976	53	N.A.

Large number of training and orientation programmes are also conducted by NCERT for vocational teachers and other key functionaries. Besides many other needs of the States are met through the activities of NCERT in this area.

2.1 PHILOSOPHY, CONCEPT AND POLICY ISSUES RELATED TO

-: VOCATIONALIZATION OF EDUCATION :-

The Need:

Vocationalization of Education at the school stage is a world wide phenomenon. The emphasis is more in the developed countries, though it is catching on in the developing part of the world. Technological advancement and maintenance of a high pace of economic growth demand a manpower equipped with high degree of skills in widely diversified areas, which can not be met by the present system of general education. A draft report of Planning Commissiom reveals that in our country general arts, science and commerce graduates account for about 6 out of 7 lakh of unemployed graduates at present an and they will account for more than 12 out of 14 lakh unemployed graduates in 198[illegible]. These figures highlight the well known fact that the core of the graduate unemployment problem is the growing pool from general arts, science and commerce courses. The situation is even grimmer in the matriculate labour market where about a crore or more youth may enter looking for work or higher education. This grim outlook emphasises the urgent necessity for overhauling the education system of our country at all levels.

Various Committees and Commissions on Indian education have tried to find an answer to the question - what pattern of education would best prepare Indian Youth for useful, satisfying and gainful occupation on the completion of the secondary stage. Almost all the important commission unanimously recommended diversification of the secondary education. Single track system of education is neither able to meet the varying needs of student population nor is helpful in the economic development of the country. Diversified courses provide students an opportunity to select subjects of study from a much wider field of education which may be useful for their future life. They are not forced into academic channel against their interest, aptitude and personal needs.

From the above description it is clear that diversification of secondary education is essential to meet the varying needs of student population on the one hand and help the economic development of the country on the other. So far as the first part is concerned there is no doubt about it and people accept it without any hesitation but the relationship between education and economic development is not always correctly understood and appreciated by many in our country. It would be, therefore, appropriate at this stage to discuss briefly this controversial issue.

During the post-war period when economic historians and economic statisticians had started dealing with the subject of economic growth, that education has come on its own as both a condition and a stimulant for economic development.

One of the major concerns of these economists has been to analyse the factors that contribute to the growth of the national economy and to an increase in the national income. The conventional explanations of the growth process for many years were confined to the role of capital formation. Economists thought it more or less self-evident that the quality of investment an economy could manage was the most important single force determining its developmental pace. More recently, the net thinking of economists on this subject has shifted dramatically. It is not now see an absolutely smaller role for investment. They still conclude that saving and investment are vital for economic development. But the difference is that now they attach for greater importance than they did before to a variety of intangible ingredients. And according to many of the best contemporary economic analysts, the greatest of these intangible or qualitative inputs to the development process is EDUCATION. Sine of the more reputable recent economic studies of growth process have assigned responsibility for one third or more of the long term improvement in productivity to the spread and strengthening of Education. This cleary shows the importance and relationship of education with economic development and a trend towards more widespread vocational education to a good many countries.

MODELS OF VOCATIONAL EDUCATION:

Vocational education has historically evolved along different paths in different parts of the world. One can discern basically three models of imparting of Vocational Education or their variants, which is briefly discussed below:-

MODEL - I

The most ancient form of acquiring Vocational skills that based on apprenticeship where the father or an experienced teacher passes on occupation skills to the son or disciple. But after the advent of industrial revolution, this got structured in the form of on-the-job training imparted to prospective skilled workers by the more experienced and senior workers in business firms or other productive establishments. The main feature of this form of Vocational education is that it is based essentially on imparting intensive and specialised practical training in some specific skill, generally of a manual kind. No formal theory related to the technology concerned or social environment is imparted. The main technique of training is that of observation followed by practice by the apprentice. The system of vocational education in Britain and Germany is predominantly based on this model. Of late, however, in-roads are being made by the emergence of vocational schools, technical colleges and polytechnics.

MODEL - II

The second model of vocational education is that of separate schools or technical institutions devoted specifically to imparting vocational instruction, where mainly skills along with a little bit of theory is given to the students. However, vocational education in this model does not exclude "on-the-job" training, which is generally organised in vocation or in a block of time set apart for this purpose. This model is prevelant in Belgium and Sweden, where, there was distrust of craft apprenticeship as it was thought to be an instrument for exploiting the young workers. These schools opened for this purpose were quite independent of an different from secondary education system meant for providing general education.

MODEL - III

In the United States, the educational philosophy based on John Dewey's work, has been against having specialised schools of vocational education. These vocational subjects are taught in the secondary high schools side by side with the general education, This represents the third model of vocational education.

The approach underlying this model stems from the philosophy that vocational education should concern itself with the broadest possible knowledge about occupations and got merely about training in specific and narrow skills associated with different occupations. To quote one of the educational experts in this area John F. Thompson "function of vocational education at the secondary level.............. should be related to what an occupational area is all about rather than all about an occupation area. Our concern for entry employment should not be with skills for a specific job, but skills that can be generalised to a life-style".

-: THE STRUCTURE OF VOCATIONAL EDUCATION IN INDIA :-

The development of vocational education in India is basically a post-independence phenomenon has primarily centred around model II mentioned above. Since 1961 model I has also been in operation through enactment of Apprenticeship Act. Some vocational subjects are also taught in high/higher secondary schools. This can be considered to form model III in an embryonic form. Thus the system of vocational education in India is of mixed type, though predominantly based on Model-II. In 1947, there were only 580 different types of vocational institutions. The number grew to 4225 by 1973. Eighteen types of vocational institutions existed at this point of time in the country. They were as follows:-

Sl.No.	TYPE OF VOCATIONAL INSTITUTION	YEAR	
		1947	1973
1.	2.	3.	
1.	Polytechnic	45	327
2.	Industrial Training Institutes	16	365
3.	Junior Technical Schools	25	266
4.	Crafts and Handicrafts Schools	47	470
5.	Industrial and Technical Schools	167	1394
6.	Agricultural Schools	20	105
7.	Forestry Schools	7	37
8.	Veterinary and Animal Husbandry	---	21
9.	Nursing, A.,N. M. and Health Visitors School	120	526
10.	Pharmacy Schools	1	24
11.	Other Para-Medical Schools	7	68
12.	Schools for Training in Co-operation	9	73
13.	Commercial Training Schools	14	63
14.	Schools for Village level officials	2	97
15.	Fishery Schools	4	51
16.	Schools for Music, Dance and Drama etc.	55	194
17.	Schools for Drawing & Painting	19	62
18.	Other Schools	22	32
	TOTAL :---	580	4225

In the majority of States industrial and technical schools from the highest proportion of vocational institutions. During the post-independence period, the higher expansion has been in the case of Industrial Training Institutions. The above mentioned institutions provide vocational courses at different levels. According to IAMR Survey report out of 468,058 students enrolled in 1973 in above courses, the highest percentage i.e. 48.7% were enrolled in post higher secondary level courses and 40.7% in courses parallel to the high/higher secondary stage. Very few viz. 11.7 and 1.8% were enrolled respectively in vocational courses corresponding to the middle and primary level. It may thus to observed that of the vocational institutions impart vocational ins- ction parallel to the higher secondary or the next higher age - fact of some significance from the point of view of delineating vocational policy under the new patter of education.

As mentioned earlier the Education Commission (1964-66) recommended diversification of higher secondary education. The Government of India accepted the recommendation and asked the NCERT to prepare a comprehensive document setting out the broad guidelines for implementing the scheme of vocationalization at higher secondary stage of education. The NCERT circulated a draft document in April, 1976, setting out a model for implementing the scheme. This was followed by a national conference in June, 1976 attended by a number of vice-chancellors, education secretaries and D.P.Is of States, representatives of boards of secondary education and ministries concerned with Education, Health, Agriculture, labour, industries etc. besides a number of other educationists. The Curriculum Committee, initially set up by the Central Ministry of Educatiom and later enlarged and supported by the NCERT was intrusted to finalise the document. The Curriculum Committee accepted the ideas as presented in NCERT Document "Higher Secondary Education and its Vocationalization" published in September, 1976. By now Nine States and three Union Territories have implemented the scheme. They are Andhra, Gujarat, Karnataka, Maharashtra, Tamil-Nadu, West-Bengal, Delhi, Haryana Kerala, Assam, Pondicherry, Andaman & Nicobar Islands.

Meanwhile the Government of India appointed to committees, one under the chairmanship of Dr. Malcolm Adiseshaiah, the former Vice-Chancellor of Madras University and the other under the chairmanship of Shri P. Sabanayagam, the then Secretary Education to the Government of India, Ministry of Education, the first to review the original document and suggest such modifications as are found desirable or necessary and the second to work out the financial outlays for the successful implementation of the scheme during the Sixth Five Year Plan in the Central Sector. The scheme has ceased to be a centrally sponsored scheme since 1979. Both the committees deliberated on the crucial issues and separately submitted the reports entitled "Learning to Do" and "Report of the Working Group on Vocationalization" respectively in the year 1978. NCERT has made a critical study of implementation of vocationalization in the implementing States, which was published in February, 1981. A National Seminar on Vocationalization of Education was organised by NCERT from 9th to 11th December, 1981. to discuss issues and problems of implementation of Vocationalization after taking stock of the present position in different States of the country.

THE DEFINITION:

Unesco in its recommendation of 1974 on technical and vocational education, defined vocational education as a "comprehensive term embracing those aspects of the educational process involving, in addition to general education the study of technologies and related sciences and the acquisition of practical skills, attitude, understandling and knowledge relating to occupations in the various sectors of economic life. Such an education would be an integral part of general education and a means of preparing for an occupational field and an aspect of continuing education. Technical and vocational education should further contribute to the achievement of society's goals of greater democratization and social, cultural and economic development, while at the same time developing the potential of the individual for active participation in the establishment and implementation of those goals. It should lead to an understanding of the scientific and technological aspects of contemporary civilization in such a way that men comprehend their environment and are capable of acting upon it, while taking a critical view of the social, political and environmental implications of scientific and technological change. Given the necessity for a new relationship between education, the working life and the community as a whole, technical and vocational education should exist as a part of a system of life long education adopted to the needs of each particular country".

OBJECTIVES:

On the basis of available literature the objectives of vocationalization of education in India may be summarised as follows:-

1. To link education with productivity.
2. To prepare students in such a way that they become more employment-worthy and would ultimately seek self-employment, if need be.
3. To reduce the mis-match between the demand and supply of manpower.
4. To provide the student with the essential occupational back-ground and familiarity with the the tools, materials, processes and technological knowledge alongwith the related science/social science.
5. To divert 50% of the student population desirous of joining higher secondary education to vocational stream or spectrum for whom this education would be generally terminal, thereby reducing the pressure for enrolment in colleges and universities.

6. To provide further educational/training facilities to those who complete the vocational programme and desire to improve their career prospects.

Particular Features of Vocational Education:

Vocationalised higher secondary education can not be equated with mere technician training; it is essentially education in the broader sense of the term. This implies that vocationalised education prepares students to understand the social reality and find out his own potential within the framework of economic development to which he contributes.

It prepares crucial middle level of manpower trained in certain specific competencies without which neither production can be increased nor services improved. An example as quoted in the NCERT document - "Higher Secondary Education and its Vocationalization" shall clarigy the point.

"If health services have to function and benefit the common man, the doctor alon can achieve nothing, unless the drugs and instruments and hospital facilities are established to reach every nook and corner of the country. This focusses our attention in the variety and number of technical people manning the productive medical enterprises on the one hand,

and a host of para-medical and technical people who make it possible for a hospital to function - from those who take X-Ray or conduct pathological tests to operation theatre technicians, physio-therapists, orthopaedic assistants, and so on".

Practical work and training are very important components of vocational education. This is so because the idea is to produce people, "who would work with their brains as well as their hands". The proportion of time spent on this activity will depend on the nature of vocation, but it should certainly be enough so that the product is eligible to enter the trade for which training is given.

The vocational education aims not only at preparing students for wage-employment but also for self-employment. The NCERT document clearly ways that "Education does not produce jobs, but vocationalized education makes it more likely for an individual to get a job or to be his own master master by either starting a new productive activity or a service which may satisfy a felt need of the community".

The basic requirement for proper selection of vocational courses in any district or region is the employment potential in it and the relevance of the course to the developmental activities.

Linking education and training with the economic life of the society is a necessity and this linkage should form the basis for appropriate course design with relevant knowledge and skill components.

According to Adiseshiah report (1978) the duration of a vocational course should normally be two years in so far as the instruction in the schools in the formal system is concerned. The courses requiring lesser duration than two years, may be pursued through non-formal systems, such as part-time and evening courses, correspondence courses etc., and the institutions should be free to offer such courses through non-formal channels.

On the above lines an attempt is being made to provide a clear understanding about the philosophy and concept of vocationalization of higher secondary education. But there is a long and difficult transition between accepting this in principle and implementing it in practice. It is our plea that vocationalization is a major transformation in education and cannot be achieved without important structural and functional changes in the whole set-up. The major issues connected with the scheme relate to: conduct of vocational surveys, course design, infrastructural facilities, instructional staff, on-the-job training, evaluation system, apprenticeship and placement and administrative set-up.

If those issues are properly resolved and the scheme is pragmatically implemented, it is bound to bring a revolutionary change in the present system of education for the betterment of the individual and the society as a whole.

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3. DISTRICT VOCATIONAL SURVEYS

Looking to the length and breadth of the country, pressure of population, poverty of the people, growing unemployment problem and worsening socio-economic situations, it is important that any new plan or scheme which is to be launched should well perceived and structured properly. Besides this, basic informations with regard to existing resources and future prospects should be collected. This could be done to a great satisfaction through surveys of desired activities.

The document "Higher Secondary Education and its Vocationalization" (1976) also suggests a survey of activities to find out employment opportunities, both wage and self, for an area/unit or preferably a district. The activities could be in the area of agriculture, trade and commerce, industry, para-medical, home science etc. In the major areas of activity, the survey should be able to tell about the employment potential in existing occupations, trend of emerging occupations, even use of self_employment, areas of presistent shortage of the required man-power, extent of educational facilities available in an area/unit, turn out of matriculates, suitability of institutions for imparting vocational education, availability of facilities for on-the-job training for the students mobility of the job-seekers and last but not the least possibilities of entering into collaborative arrangements for practical instructions and training in neighbourhood establishments.

The Malcolm Adiseshiah Committee Report 1978 (Review Committee Report) largely endorsed the guidelines given by the Document with minor modifications. Regarding the conduct of vocational syrveys prior to the launching of the scheme the report says "the purpose of such surveys was to make reasonably accurate estimates of manpower requirements in the area, the range of available occupations, the trend of emerging vocations, the details of the level of competencies needed, the approximate duration for which such competencies may be in demand, the extent to which educational and training facilities are available in the neighbourhood to provide the required competencies". Another important objective was "to provide the data for the location of schools with vocational courses" keeping into consideration the various other factors for implementation.

The National Seminar on Vocationalization of Education (1981) offered the following recommendations :

1. The NCERT should convene a meeting of the officers concerned with district vocational surveys to resolve the issues and problems in this area. This meeting should revise the survey guidelines, schedules and statements on the basis of the experiences gained. It was further resolved that comprehensive handbook for conducting vocational surveys should be prepared and made available to

In conducting such surveys employment exchanges, principals, teachers, experts, etc. in the area should be contacted for gathering information.

2. The NCERT should organize more programmes for orienting survey workers and officers and selected research projects in this area may be assisted by the NCERT.

3. While conducting the district vocational surveys proper linkages may be established with the recently constituted District Man-power and Employment Generation Councils wherever possible.

4. The Seminar endorsed the earlier recommendations that the selection of courses, their content and the choice of institutions should be based on vocational surveys but resolved further that till such surveys are completed vocational courses may be introduced on a limited scale on the basis of the commonly felt needs and on consideration of the chances of their success as a measure of prudence in the initial phases.

GRANTS FOR VOCATIONAL SURVEYS:

On the basis of the guidelines given by the NCERT Document and later by the Review Committee Report, the Planning Commission decided to give Rs.10,000 per district to the State Governments through the Ministry of Education, Govt. of India for conduct of vocational sur

Grants for this purpose were released for about 155 districts. Now this facility has been withdrawn by the Govt. of India.

POSITION OF VOCATIONAL SURVEYS:

All States which have introduced vocational courses till this date did not conduct district vocational surveys as recommended before launching of the scheme. Each implementing state followed different criteria for the selection of the vocations. Among them need of a vocation through common sense and discussions among knowledgeable people were the main criteria besides several subjective considerations. For introduction of a vocation in an institution facilities available in that particular institution, and its neighbourhood were considered.

Later, all the implementing States and others which have drawn funds for the purpose have made a beginning with regard to the conduct of vocational surveys for the districts. Today, situation is quite different. Among implementing States Gujarat & Karnataka have conducted vocational surveys for all the districts and their reports are out for use. In Maharashtra, vocational survey for only one district has been published, so far. Tamil Nadu also has conducted the district vocational surveys. Vocational surveys for three districts of Andhra Pradesh are nearing completion. Orissa conducted vocational surveys for 5 districts. Not much is known about the position of vocational surveys in West Bengal. Remaining States and Union Territories are watching the programme of vocationalization at +2 stage closely. At the same time some of them are busy in doing preliminary work in the form of surveys. Haryana is one State which has conducted the surveys for all the districts. Punjab has taken up this work for four districts. Himachal Pradesh, Uttar Pradesh have made a small beginning in this respect by way of appointing survey officers and assisting staff. Nagaland and Sikkim have completed and published the survey reports for two and one of their districts respectively.

Besides, four Regional Colleges of Education and Vocationalisation of Education Unit conducted pilot surveys for [illegible] one district each.

ACADEMIC ASSISTANCE :

The Vocationalization of Education Unit of the NCERT developed guidelines for the conduct of vocational surveys. The Unit feels that the survey should concentrate more on collection of primary data rather than secondary data. For this purpose five schedules and about 34 statements have been developed. The guidelines were revised based on the experience of the implementing States. These guidelines provided background materials for the development of a "Handbook for Vocational Survey Workers" in a Seminar-cum-Workshop held in November 1982 in which survey workers and specialists from 11 States and experts of Institute of Applied Man Power Research, Planning Commission, National Institute of Educational Planning and Administration, and Central Institute of Research and training in Employment Service participated besides the experts from NCERT.

Guidelines developed by the Unit are disseminated through orientation Programmes for survey officers which are organised on the request of the State Governments. They have also been made available to all States and Union Territories at several occasions.

OBSERVATIONS ON THE SURVEY REPORTS PUBLISHED:

Barring one or two, large number of survey reports are found lacking in justification and support through data for selection of courses and institutions. There are number of reports which do not even specify the vocations, number and name of the institutions which should offer them. It will not be the institutions which should offer them. It will not be incorrect to say that most of the reports have been prepared based on secondary data. The utility of the Survey becomes unreliable after 5 to 6 years for the purpose of selection of vocational courses due to changed circumstance.

DIFFICULTIES OF SURVEY WORKERS:

The faculty of the Unit got several opportunities to meet and discuss the matter related to vocational survey workers. During the discussions they explained problems which they faced at the time of data collection. According to them, of their major problems was extraction of information regarding future needs, type of skills required, expansion programme from the industries etc. Hence collection of primary data for only became difficult but at times impossible also. The response to questionnaires was hardly 1-5 percent from employers. Facilities in terms of mobility, time allotment and fewer hands to assist were the other constraints in conducting the surveys. For obtaining desired objectives of sur survey they should be give adequate facilities in terms of vehicle and staff. besides ample time for the purpose. Apart from this, they were of the opinion that the secretary, education should request his counter-parts in the relevant Ministries to issue orders to their respective departments for supplying all the information required by them as this will facilitate their work.

4. ADMINISTRATION AND SUPERVISION OF VOCATIONAL COURSES:

Implementational requirement:

The implementation of Vocationalization of Education requires seven main functions :

- conduct of meaning ful occupational surveys and selection of appropriate vocational courses;
- design and development of suitable curricula and textbooks;
- provision of infrastructural facilities for successful implementation:
  - (a) location of suitable school, and
  - (b) location of collaborating institution;
- identification and selection of instructional staff both whole-time and part-time, and their preparation;
- on the job training;
- evaluation and quality control;
- effort for recognition and placement.

Successful management of the above functions require:

(i) adequate administrative arrangement;

(ii) coordination;

  (a) internally within the educational administrative structures; and

  (b) Externally with

    - man power planning and statutory and other bodies and
    - collaborating and employment agencies;

(iii) supervision to ensure that the system functions smoothly and that established standards are being met.

ORGANISATION:

In India different departments at the Centre and in the States control different institutions offering education and training for middle level jobs: all the para-medical schools are under the control of statutory councils, such as the Nursing Council, the Pharmacy Council and the Dental Council; agricultural education at polytechnic and university leve is controlled by the Indian Council of Agrucultural Research; Polytechnic educatiom is enrolled by the All India Council for Technical Education in the States; the Industrial Training Institutes are controlled by the Directorate of Employment and Training in the Ministries of Labour. All these organisations work in isolation.

The scheme of vocationalization of Education at plus 2 stage envisages to offer vocational courses for middle level workers in all possible diverse fields as per need of the communities from time-to-time. So 'one of the most important pre-requisites for the successful implementation' of the programme is to bring about cooperation and co-ordination' among all the agencies and departments working in the areas of vocational education for the purpose of on-the-job training, recognition and employment.

The Adisashiah Committee endorsed the recommendations of the Central Advisory Board of Education and the view-point of NCERT's document on Higher Secondary Education to establish at the national level. the National Council of Vocational

Education, which would be an apex body with the membership of all statutory bodies such as I.C.A.R., A.I.C.T.E., N.C.T.V.T. Nursing Council, Pharmacy Council, Dental Council etc.

It was also recommended to establish the State Councils for Vocational Education at State Level, and, local bodies at the local level.

The function of the SCVE would be similar to that of NCVE at State level. The cunction of Local Bodies is more direct, and intimate and has a permanent bearing. Its endeavour should be concentrated to obtain constant support and co-operation of local community and other agencies such as Panchayat Unions, Agricultural and Rural Cooperatives, the small scale industries corporation, Khadi and Village industries Commission, Krishi Vigyan Kendras, Local branches of nationalised and other banks, Financial Corporations, and various voluntary organisations, for (a) identification of vocations, (b) training of teachers and pupils of vocational courses, (c) training of enterpreneurship, (d) provision of loan and credit facilities, (e) marketing of products (f) self and wage-employment, (g) evaluation of the scheme from time-to-time, (h) follow-up action.

Such organisational set-up at the nationa, State and local level can only channelise the willing post-secondary youth force in realistic vocations and lay a strong foundation for the future.

Establishment of apex body NCVE at the

materialised. The interministrial meeting endorsed the idea of establishing an All India Board of Vocational Education under the aegis of All India Council of Technical Education. The AIBVE has been recently constituted but is yet to start functioning. The National Seminar of Vocationalization of Education (1984) recommended that the AIBVE should be given an independent status for its effective functioning which ultimately should be transformed into the NCVE with statutory powers.

The States have been neutral to the question of SCVE. Only Karnataka has established SCVE with a limited role. The states have followed their own independent paths found convenient to the existing administrative infrastructure. To plan, organise and manage the Vocational Programme at the State level separate Councils of Vocational Education and a Directorate of Vocational Education must be established.

At the local level Principals of the Higher Secondary Schools/ Intermediate Colleges where the courses run are the main contact persons on whose interest the fate of the programme depends. A Principal's major concern being the administration of the college/school as a whole, and so far as college schools is concerned, vocational programme is just one of several, little attention is generally paid to the vocational programme which require constant alertness and intensive effort.

"It is unfortunate that there is little appreciation of the part that administration has to play at the higher echelon of the States and much more so at the Centre".

IMPLEMENTIONAL LAPSES:

In the absence of the effective coordinating and monitoring agencies at Central, State and Local levels, that some of the States/U.Ts. have ventured to launch the scheme somehow indicate that there is a felt need of the programme. Undoubtedly with such an inadequate organisational set up several implementational lapses are bound to crop up. The lapses were highlighted by the report on "Vocationalization of Post-Secondary Education - A Critical Study of Implementation in the States".

Some of the important lapses which need re-emphasis are pointed below :

- the vocational courses were introduced by all the States without proper preparation;
- the vocational courses were selected before the occupational survey was conducted;
- the heads of the institutes were not oriented before the programme was launched;
- raw graduates, post-graduates of diploma-holders, without any professional experience have been appointed for instructional purposes often on temporary basis or on part-time basis for full-time work leading obvious undesirable results;

- no fund has been made available by one of the State government to its school to conduct the courses; in another State, though very generous grants have been given the administration has made no efforts to see that proper equipment is procured and effectively put to use; in some funds have been supplied at a very late stage;

- except one State none seems to have paid any attention to take suitable steps to delink the degrees from the jobs, to make,

- job requirements along the basis of requirement to recognise the vocational courses for middle level employment, and to prescribe their qualifications as preferential or alternative qualifications, to coordinate with various departments of the States and the Central government for the absorption of the students suitablu;

- All the States which have started the vocational programmes have quitely provided for admission into general and professional degree streams with or without bridge courses; this may result in converting the vocationalization programme into a devious method of securing admission to the university.

PREPARATION FOR CREATIVE WORKFORCE:

"The major policy goal of vocational education in a country is to fulfil the manpower requirements for economic development and the social requirements for employment". It is the preparation of middle level work force, which is the objective of vocationalization of education +2 stage that is crucial for a country like India with developing economy.

It should not be forgotten that to meet the employment requirements, the students are prepared for specific vocations not as human components of a machine but as creative individuals conscious of the tempo of the age, social and cultural realities and their contributory role to the society as responsible members.

The educational administrators should realise that vocational education, therefore, should not only focus attention on the acquisition of practical skills, attitudes, understanding and knowledge relating to specific vocation in isolation but it should also lead:

1. to an understanding of the emerging trends in the field of vocation at national and international level;
2. to the comprehension of the social, political and environmental implications of scientific and technological change;
3. to the establishment of a new relationship between education, the working life and the community as a whole;
4. to the appreciation of vocational education as a part of a system on life-long education adapted to the needs of one's own society.

If these points are taken care of in earnest while implementing vocational courses we do hope we will be able to contribute a cadre of efficient, healthy and creative work-force by the turn of the country which, in turn, will accellerate the pace of growth of our country in all spheres of economic and social life and enhance the quality of life as well as prosperity of our nation.

As partial fulfillment of this aspect of vocational education the general foundation courses recommended bythe Adiseshiah Committee for vocational stream provided a broad background area of knowledge of life and history of science and technology on the development of Indian culture.

It is unfortunate that implementing States have twisted this course to suit their own temporary conveniences.

ADMINISTRATIVE RESPONSIBILITY:

The wide gap between objectives and realisation places heavy responsibility on the administration in the States as well as the Centre.

It is the entire responsibility of the Centre to formulate the policy, prepare schemes in operational terms, set the goals and indicate the targets to be achieved. The Central Government Government itself cannot formulate them and the task of working out a viable scheme acceptable to the country should be entrusted to preferably a statutory body, like the Indian Medical Council drawing the best experts from various professi
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manpower preparation in our integrated form so that no sector of employment is neglected or ~~xXx~~ starved of suitable personnel. It also should be entirely responsible for standards of achievement, quality of education, employability, recognition of diplomas and certificates, in short, everything connected with vocationalisation".

In 42nd Amendment education was brought under concurrent list but "It is in the States that the schemes are largely implemented. Unless there is a separate well-knit administrative set-up in each State which can continuously assess plan and execute the schemes, what has been set down in the objectives can hardly be achieved...... it is best to have a compact, effect effective Directorate for Vocationalization in every State and to entrust it with the entire responsibility & planning, executing and evaluating the scheme. This Directorate in addition, has to assume the entire placement and apprenticeship responsibilities and any other responsibility that may become necessary due to a change in the national policy".

In order to derive best results from the vocational programme through maximum realization of its basic objectives, Heads of institutions must be guided by a properly constituted school vocational committee which should act not only as an advisory body, but also an executive agency, leading to social acceptability and increased employability of vocational students. The National Seminar (1984) recommended setting up of vocational committee at school and district levels which should vocational courses we do hope we will be able to contribute a cadre of efficient, healthy and creative work-force by the turn of the country which, in turn, will accellerate the pace of growth of our country in all spheres of economic and social life and enhance the quality of life as well as prosperity of our nation.

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SUPERVISION:

Supervision of the implementation, curriculum development, development of Print and no-print materials teaching aids teacher-training, vocational surveys and other related academic matters is essential for effective programme implementation. For this purpose, there is a need to set-up a central agency at the national level. The National Seminar (1984) recommended that a Central Institute of Vocational Education may be set-up for the above purpose at NCERT which should have enough staff from the major vocational areas.

CONTINUING TASK FORCE:

Many of the steps for effective vocationalization will require inter-ministerial and inter-governmental collaboration and co-operation. Because of its unique position, the

Planning Commission of the Union Government can provide such an impressive but much needed impetus by establishing a "Continuing Task Force". The National Seminar (1984) recommended that a "Continuing Task Force" on Vocationalization of Education may be set up under the aegist of Planning Commission which should have its membership drawn from NCERT, Ministry of Education, Ministry of Labour, Ministry of Industry, State Government, other concerned institutions and and the Planning Commission itself. The Task Force so constituted should be given the responsibility of identifying the existing resources for training, orientation monitoring and evaluating the progress of the State periodically and building of strong links with the State Governments. This may be continued till establishment of NCVE.

5. CURRICULAR DESIGN AND INSTRUCTIONAL MATERIALS

A course of study is designed on the basis of certain criteria e.g. objectives, mental and physical level of development of the taught, institutional facilities, time limitations, organization of the study period etc. In a vocational curriculum the first cirterion viz. objectives matters the most in the design, because an effectiv vocational curricular has got to be different from the one followed in the conventional academic stream. Basic objective of the scheme of vocationalization of education essentially envisages development of vocational skills in the students, thereby making them more gainfully employable either through self or wage-employment in the vocations chosen by them. This objective is evidently reflected in the curricular designs recommended for vocational stream in various documents. For example, the document on vocationalization of education prepared by NCERT stipulates 50% of the total instructional time for the study and practice of vocational electives, which has been increased to 70% by the report of the ReviewCommittee, and 80% by National Seminar(1981) on vocationalization of education. This much time allocation for vocational electives is considered quite adequate for the development of necessary skills in the students. In fact, the NCERT Document also provides for 75% of the time for vocational study, if we consider the 25% time earmarked for the study of related subjects facilitating better understanding of the basis and scope of each vocation. Thus, we may conclude that 70 to 80% of the total instructional time is generally recommended for vocational subjects, of which not less than 50% should be devoted to vocational practice alone.

The second major component of the vocational curriculum is the language(s) for which 15 to 25% of the time is recommended, but the effective time allotment for the study of language does not exceed 15%. There is consensus among educationists that the language to be taught in the vocational stream should be functional in nature-quite different from what is prescribed for the general academic stream. The language should facilitate the vocational students to understand their vocational electives. Hence, it is more appropriate to prescribe the same language of course with a functional content to vocational students which is the medium of their instruction. This requires development of new syllabi of language and textbooks etc. exclusively for the vocational students.

The third component of vocational curriculum includes subjects of quite a diverse nature and they are termed differently. For example, NCERT Document recommends "Science, Social Science and other related subjects" that may help understand the basis and scope of the vocation, whereas the Review Committee prescribes "General Foundation Course" which will help students to become enlightened citizens and good professionals.

Vocational Curriculum in Different States:

Basic characteristics of various vocational curricula as in vogue in different States had been summed up in a table in the booklet "Vocational Education at +2 Stage". The table reveals that notwithstanding the basic objectives of the scheme of vocationalization of education as visualized at the national level the vocational curricula in States have been designed to realise the specific objectives chosen by the States. For example, in a State not claiming to prepare students exclusively for the world of work, the weightage to vocational subjects is just a pittance-33-34% while the same is above 50% in States striving to mould the students into effocient and confident vocational cadre.

Curriculum Design in the States

Name of the State/Union Territory	Language		General Foundation Course	Related Subjects		Vocational Theory and Practise
	No.	Weightage in % of time	Weightage	No. of Subjects	Weightage in % time	Weightage in % of time
West Bengal	2	20	-	3	30	50
Delhi/CBSE	1	20	15	1 or more	25-30	50-60
Karnataka	2	25	-	-	-	75*
Tamil Nadu and Pondicherry	2	23	-	1	17	60
Maharashtra	1	16	-	3	50	33-34
Andhra Pradesh	1	23	-	2,3	Upto 40	32.3-7
Haryana	1	20	5	-	-	75*

*Related subjects are integrated with vocational subjects.

Considering the unique nature of a meaning-ful and effective vocational curriculum it becomes amply clear that it should be designed in a different way. Development of vocational curriculum is not an academic exercise to be attempted by university professors and academicians. It is a challenge which can be rightly entrusted to professionals from the concerned fields/industries, employers who know their profession/vocation in its finest details. Such persons can single out the competencies, skills and expertise organically required in a particular vocation which must be included in the vocational curriculum. Of course, subject specialists and experts should also be involved in designing a vocational curriculum, but major say should rest with the professionals from the field who can correctly evaluate any component of the curriculum from the vocational point of view.

Instructional Materials:

For the success of any educational programme instructional and textual materials are in no way less important than the other basic pre-requisites like infrastructural faci--lities in the institution, competent teachers, co-opera--tion of the society etc. Nevertheless, vocational courses in most of the States were started under conditions of near total absence of any instructional material specially designed for the vocational students. There were two main reasons for being so:

1. Vocational teachers were expected to make use of the vast literature concerning their respective vocations that is readily available for various courses offered in the institutions of general conventional education and make suitable notes for their students in conformity with the syllabi.

2. Delay in the implementation of vocationalization of education would have been detrimental to our vital national interest.

It was heartening to observe that in most of the institutions the vocational teachers have lived upto these expectations. Good notes were prepared by them and distributed to the students. Unfortunately, utility of such notes was confined to those institutions only where they were prepared. In some States Teacher-Guides and other instructional material were also prepared for different vocations. But evidently, all this was quite inadequate to meet the requirement of vocational students for quality instructional material.

Under such circumstances the NCERT resolved to contri-

-bute its own mite to fill the void in respect of instructional material for the vocational students. A Working Group(1982) comprising of eminent educationists, subject experts and professionals from various fields chalked out guidelines for the development of instructional material after taking through cognizance of the scheme of vocationalization of education. These guide-lines found immediate application in two NCERT workshops at Udaipur and Mysore where five instructional manuals - 3 in Agriculture and 2 in Commerce - were developed. These manuals are being sent to to some selected institutions offering vocational courses for trial. After receiving feed-back from the students and teachers the manuals will be accordingly modified and then printed for wider circulation. The NCERT continues to develop similar instructional materials for other vocational courses as well through a series of workshops.

To summarise the situation regarding availability of instructional materials to vocational students as prevails today, the latter can bank upon:

1, Cyclostyled notes prepared by the teachers as per syllabi after consulting the available text-books manuals, periodicals etc.
2. Low priced popular books in various vocations by some publishers, bulletins issued by ICAR, KVIC as well as specialisedresearch organizations like IIHR Bangalore, CFTRI Mysore, CIFE Bombay, NDRI

Karnal etc.

3. Certain foreign publications or their adopted editions. (Indo-Soviet Textbook Board is planning to introduce a large number of vocational books).

Extract of the recommendations of National Seminar (1981) regarding Curricular design and Instructional material.

1. The NCERT should undertake the preparation of suitable instructional material and provide guide-lines to the States for developing instructional material as per their needs.
2. Each vocational course should be designed in an integrated form comprising vocational skills, theory related subjects and elements of General Foundation Course on the basis of job-analysis with provision of the total instructional time is devoted to vocational component.

6. INFRASTRUCTURAL FACILITIES

The need for maximum utilization of the available resources in implementing vocationalization of secondary education has been repeatedly emphasized. It is recommended that no large scale or ambitious expenditure be incurred on equipment unless it is ascertained that it will be needed for a long period. In fact with the short term emphasis on agriculture, managerial and health, and para-medical education vocations, attempts should be made to identify and exploit locally available resources. Any expenditure on vocationalization should be considered a national investment and an investment for the future.

The implementation of a vocational course itself very much depends upon the facilities available in terms of buildings, classrooms and laboratories, workshops and library. Any institution which is selected for introduction of vocational programmes must possess the minimum facilities for instruction in theory and practicals.

Very few of the institutions possess the required type of laboratory equipment or any workshop facilities. But when the choice is made it is expected that the school or the college has at least a sufficient number of classrooms and laboratories for basic science courses and a library which would supply an adequate number of books on languages, science and related subjects.

If, there are any organisations or establishments which possess facilities for training the students then the institution should be able to enter into collaborative arrangement and secure proper training facilities. For example, Delhi introduced a new course on Opthalmic Techniques, and Dr. Rajendra Prasad Hospital for Opthalmic Sciences agreed to provide facilities of expertise and implements to the students opting for this course. There are several such examples of collaboration throughout the country. Thus equiping the institution to the minimum level and making up the deficiency through practical training in the neighbourhood establishments is perhaps the best combination. This not only works out to be economical but also establishes a close rapport between the school and the establishment.

The NCERT document - 'Higher Secondary Education and its Vocationalization' - highlights the above aspect in emphatie terms. Institutions which could become centres of vocational education are health and agricultural schools, the polytechnics, the ITIs, and the industrial or other centres where training facilities for apprentices exist. Institutions belonging to different departments of the government, public enterprises and private organizations can be harnessed, so that the cost of vocationalization do not mount. Large public sector undertakings and workshops such as those belonging to railways, could be made to take positive steps to adopt higher secondary schools for teaching and training in certain fields.

PRESENT INFRASTRUCTURE IN DIFFERENT STATES:

Andhra Pradesh :-

Andhra Pradesh introduced vocational courses from the academic year 1979-80. Majority of the vocational courses were being run in co-ordination professional/Technical institutions like Agriculture/Veterniary/Home Science/Dental Colleges and Polytechnics where the required infrastructural facilities were already available. The courses run in this manner were in the areas of Engineering, Agriculture, ~~Para-medical~~ and Home Science. However, the courses in the field of Commerce and Business Management, Commercial Garment Making and in some cases Pharmacy were run independently. Staff membersof co-ordinating institutions also handled the classes on part-time basis.

Some of the difficulties experienced by the Principal, teachers, and students in regard to co-ordinating institutions are enumerated below :

1. It is expensive for students to go to the co-ordinating institution several times a week.
2. Delay in utilising the sanctioned funds by the co-ordinating institutions.
3. Difficulty to adjust the time-table between the college and co-ordinating institution.
4. Defficulty in conducting practical classes on account of non-availability of raw materials, as

they are not bought in time.

5. Waste of time in going and coming to the institutions.
6. Step-motherly treatment being meeted out by some polytechnic staff.

Tamil Nadu :-

An unique strategy in operation in Tamil Nadu is the attachment of the school offering vocational courses to local industries, hospitals, farms, banks, factories, workshops and the like. This, to a great extent, makes up for the lack of their own facilities in the schools and is in conformity with the national recommendations. Encouraging co-operation is also received from the above mentioned institutions for giving training or sparing the services of their staff to work as part-time instructors in the school.

Karnataka:

So far as infrastructural facilities such as buildings and laboratories are concernedalmost all the colleges satisfy the requirements. Some of the collegeshave good farms, working dairies and workshops. Facilities for automobile repair, wood-work, type-writing, metal turning, printing, weaving and hot metal works are also available. Practical facilities are sought from hospital for the vocational courses in the para-medical areas.

But where an institution has to seek collaboration with outside agencies some difficulties are experienced. This is particularly true in cases of para-medical and technical courses. For example, Hindustan Machine Tools (HMT), where the practical work for Clock and Watch Repair Technology has been arranged is located at the outskirts of Bangalore nearly 16 km. away from the college. It is expensive for the students to go to the HMT factory several times a week.

While the collaborative arrangement entered by a college/school is the most satisfactory solution, lack of close co-oeration may ultimately result in the failure of the arrangement itself, and it is the students who have to pay the penalty.

The prevailing attempts at vocationalization of education could not catch up on account of economic reasons which contributed to the wide gap between vocational theory and vocational practice. This is so perhaps because of the prohibitive cost of equipment necessary for good vocational education. At times equipment used are old and outdated because of the fast changing technology. But the change of equipment for training does not take place simultaneously due to obvious reasons. This results in the teacher or instructor being forced to use pictures of the equipment rather than the equipment itself let alone its handling by the students.

AREA WISE VARIATION :

Each vocation in the five broad areas of Agriculture, Business and Commerce, Home Science, Para-medical and

Engineering and Technology demand a varied infrastructure. Though some of the basic needs like classrooms, workshops and laboratories remain common for all vocations, the need for equipment and instruments vary. An attempt has been made here to elucidiate the infrastructural facilities for one vocation from each of the five areas.

Agriculture:

Poultry Farming or Poultry Science as it is referred to in some schools is a popular vocation in the area of Agriculture. In order to impart skills to the students it is important that a school offering this course should have a minimum of twenty five birds and an area of 50 sq.ft. Besides this the other equipment essential are:

Poultry shed
Feeders - layers and broilers
Chick feeders
Incubators
Egg trays (containing for collecting eggs)
Waterers
Brooders
Litter (Paddy husk)
Grit (Calcium carbonate)

Business and Commerce :

A student coming out of the commerce vocational course should have not only aquaintance with the office machines but also have reasonable operational efficiency in the use of machines. Practice tests and practical problems should be so designed that the students solve them by using office machines. Hence it is suggested that a Commerce Laboratory in a school offering Office Practice should provide the necessary infrastructure as detailed below:

Adding machines
Totary calculator
Stencil duplicator and accessories
Staplers
Punching machines
Filing equipment with accessories
Dating machines
Cheque writing machines

In addition to these equipment the laboratory should have proper and adequate seating arrangements for the instructor and students, a black board, soft board/bulletin board, proper lighting facilities-artificial and natural, good ventilation and adequate storage space.

Home Science :

Of the twelve vocations under the Home Science area Food preservation is one of the most popular courses. A food preservation Unit should be self contained and independent of the other Home Science laboratories. The infrastructural facilities for it are enlisted below:

Hand can sealer complete with tools

Pressure cookers with accessories

Screw type extractor

Crown corking machine (hand operated, portable)

Cabinet drier with 6 trays

Wooden lime squeezers

Stoves

Stainless steel knives (cutting, peeling, coring, pitting, pine-apple cutting knives corner, puncher, eye removers)

Enamel basins, buckets, mugs - graduated

Stainless steel or Aluminium patillas with lids

Stainless steel tea-spoons, tablespoons, forks

Wooden ladles

Graters

Pan balance

Motor and pestle

Hot can lifting tongs

Preparation tables

Work benches and stools

Dusters, towels, filter cloths

Measuring equipment - refractometer, Brix, Hydrometer, Thermometer, Jelmeter, Salometer

The work tables should be of correct working height. There should be provision for a blackboard so that instructions can be given to the students. The Unit should have adequate storage space for preservatives, utensils, containers, crockery, and equipment. A continuous supply of safe drinking water, and at thesame time proper drainage system to carry out the used waste water should be provided for. A storage room to keep perishable foods and dry stores, and at the same time to store the finished product to check shelf life. The Unit should be well ventilated, all doors and windows wire meshed to keep out flies and insects, on the whole it should be protected against pests and rodents. An exhaust fan is essential to throw out the cooking odours. A model layout of a Food Preservation Unit is shown in Fig. A

Para-medical: The laboratory for the vocational courses of Medical Laboratory Technicians should contain the following equipment.

Microscope
Slides
Glass ware and accessories
Microtome
Colorimeter
Gas, burners
Water supply
Chemicals
Incubator
Autoclave
Drying ovens
Muffle furnace
Gas chamber
Refrigerator

These are some of essential equipment necessary for such a laboratory. Besides this the work tables must be of good working height, each unit must have a locker to keep glassware and shelves on the unit to stack the essential and commonly used chemicals. Each working Unit should be equipped with a sink with running water and cleaning agents. There should be a store-room to store all the surplus chemicals and glassware. The laboratory should be provided with sufficient lighting and ventilation, provision should also be made for an exhaust fan, to throw out the fumes from the work area.

Engineering and Technology :

In this area the vocation being exemplified is that of Electrical Maintenance. The infrastructural facilities for this vocation is as follows:

Metor Generator (MG) Set.

DC shunt motor with starter and field regulator and with test bed arrangements

MG set-induction motor coupled to 230 volts compound generator with field regulator and starter for motor.

Slip ring induction motor.

Working kit for three phase squirrel cage induction motor.

Single phase capacitor start and shaded pole induction motor.

Phase delta-star-transformer

Transformer

Starters of different types of DC and AC motor starters.

DC Potentiometer & wires

Accumulators

Stop Clock

Synchroscope

Tachometer

Ammeter - MC, MI

Voltmeter - MC, MI

Wattmeter

Variable [illegible]

Home Appliances - [illegible], [illegible], Geyser, [illegible] [illegible], Mixer etc. one each.

Work tables and [illegible].

Blackboard, [illegible] [illegible] [illegible] lighting and ventilation.

In conclusion it can be [illegible] in a nutshell that the implementation of [illegible] [illegible] depends on the infra-structural facilities available to a great extent. As stated [illegible] [illegible] either in the form of [illegible] [illegible] [illegible] or acquiring the minimum of facilities and equipment.

of vocationalization of education +2 stage that is crucial for a country like India with developing economy.

It should not be forgotten that to meet the employment requirements the students are prepared for specific vocations not as human components of a machine but as creative individuals conscious of the tempo of the age, social and cultural realities and their contributory role to the society as responsible members.

The educational administrators should realise that vocational education, therefore, should not only focus attention on the acquisition of practical skills, attitudes, understanding and knowledge relating to specific vocation in isolation but it should also lead:

1. to an understanding of the emerging trends in the field of vocation at national and international level;
2. to the comprehension of the social, political and environmental implications of scientific and technological change;
3. to the establishment of a new relationship between education, the working life and the community as a whole;
4. to the appreciation of vocational education as a part of a system of lifelong education adapted to the needs of one's own society.

If these points are taken care of in earnest while implementing

7. TEACHERS AND TEACHER PREPARATION

With the introduction of Vocationalised courses at the higher secondary stage, there is a need for reorganisation of teacher education.

The professional preparation of teachers, being crucial for the qualitative improvement of education should be treated as a key area in educational development and adequate financial provision should be made for it both at the state and national levels.

NCERT in its document on "Higher Secondary Education and its Vocationalization" has recommended that teachers for the vocational subjects, on which students spend considerable amount of their time, should possess basic vocational qualifications and expertise. It has been suggested that part-time teachers and instructors (like doctors or motor mechanics) should be freely obtained from amongst those who are in the concerned vocation, even though they may not have a Master's degree or a teacher training certificate. The involvement of professional experts in imparting training for skills would bring them into closer collaboration with educational activities and offer them opportunities to appreciate the problems involved in institutional training and the need for the provision of facilities by various industries.

agricultural farms, commercial organisations hospitals, and so on. This collaboration would result in a very healthy may be provided at a few centres. The full time teachers would required periodical re-training also the sympathy and cooperation of the industries and other organisations are 1. absolutely essentiall. After all the educational activities and economic and steps for social development have the common aim of making the society more prosperous and dynamic. However, it is also to be appreciated that the earlier stages; it would be impossible to supply adequately qualified an and trainind teachers on a permanent basis in a large number of specified fields. Teacher training takes time and the country can ill-afford to wait until such teachers are available in sufficient numbers. A compromise between what is best and what is immediately needed has to be agreed upon in the larger interest of the country.

In "Learning to Do", the report of the "National Review Committee on Higher Secondary Education with special reference to Vocationalization" it has been said that unless a teacher is prepared by way of pre-service and in-service education take up these new challenges of education, the objectives of the plus 2 reform will be a non-starter. The universities which are responsible for pre-service teacher education are requested to reconstruct the teacher education curriculum for graduate and post-graduate classes, so that their products who join the teaching profession are truly and conceptually committed to so-cially useful productive work and community service. Such an attitudinal change in the future generation of teachers will facilitate a similar attitudinal change in the school going child on. Similarly, the new emphasis on practical work and vocationalization of education has also to be incorporated in the teacher education curriculum so that the availability of suitable teachers to teach vocational courses may be ensured for the future. For instance, a teacher teaching vocationmal agriculture must be able to meet the education needs of the famers and must be equally at home in the class-room, in the farm mechanic shops and in the firms of the community. Besides pre-service education, in service courses for existing teachers in schools will have to be organised on a mass scale. The Universities, the Teachers' Training Colleges, State Councils of Educational Research and Training (SCERT), State Institute of Education, NCERT, Boards of Secondary Education, Agricultural Universities versities, institutions like ICAR, and all others who are engaged in the programme of orientation of teachers should be actively involved in this task. New demands of education have posed new challenges for the teachers and it is only through in-service and refresher courses that the teachers can adequately meet the challengs of change. It has been recommended that at the start there should no instance on post graduate qualifications in respect of teachers of vocational courses. What is needed is means of developing the required skills and conceptencies in particular vocations and for this, services of persons who have had actual experience of "on-the-job" may be fruitfully utilised to teach vocational courses. It has been said that part-time teachers may also be appointed, wherever necessary.

The efforts made by some States, which have introduced the vocationalisation of eudcation programme, regarding the preparation, training, appointment etc. of teachers are given below:

KARNATAKA: Although provision has been made for the appointment of full-time and part-time teachers yet the courses are run mostly by appointing teachers on part-time basis. The appointment of full-time teachers leads to the problem of safeguards of their services. Even full-time appointment is made on temporary basis. The appointment of part-time lecturers is preferred as far as possible. However, full time appointments are also made but such teachers leave the jon and to whenever they get permanent jobs elsewhere. There is no system of pre-service training to these teachers as the recruitment is not on regular and permanent basis. However, some training programmes have been organised for in-service teachers with the help of N.C.E.R.T., New Delhi.

MAHARASHTRA:- One of the difficulties reported by the State is that teachers with good skills soon leave the teaching jobs for better prospects. Even the teachers that are available for a short spell of time are not educationally equipped to teach- The state has emphasised the need to train teachers.

TAMIL NADU:- The bifurcated courses offered under the old 11 year system were not successful because of the employment of full time staff who were mostly concentrating on class-room teaching rather than giving them on-the-job training or taking them outside the class-room.

So the State Government have taken a decision to appoint only part-time teachers by drawing suitable persons serving in the field so that their expertise and facility available in their place of employment could be utilized for the benefit of vocational students. This will also reduce the pressure on providing the infracructure in the schools for practical training. However, the staff of erstwhile bifurcated courses who were teaching subjects similar to vocational subjects and who were found suitable have been absorbed for teaching the vocational subjects. Part-time teachers are employed at the rate of two per vocational subject for each year. Governmenthave prescribed the first degree in the subject concerned as the basic qualification without insisting on any training qualification. The part-time teachers do not have any training qualification, so inservice courses for exposing them to the higher secondary syllabus is considered necessary. Only a few have been given the orientation course with the financial assistance and the expertise of NCERT. Every course can have 2 part-time teachers who are drawn from the field . The part-time teachers were paid Rs.150/- p.m. per course. If they handle two years' classes they can get Rs.300/-. Even though the remuneration seems to be meagre, the quantum of amount is not criterion. It is not an impediment in securing the services of experienced and suitable persons like Doctors, Engineers, Agricultural Officers, Bank Officers, who are in active service, for teaching the vocational students on part-time basis.

WEST BENGAL : Though in the present staff pattern, full-time teachers have been recommended to teach vocational subjects sufficiently qualified teachers are generally not available. Further, no arrangement has been made for training of vocational instructors.

A critical study of the implementation of vocational courses has revealed that there is a real and urgent need to train vocational teachers with first class practical competence and adequate background of the subject matter so that they can impart instruction effectively to the students, to make them acceptable to the employers or competent set up their own small scale enterprises.

The nature of the vocational courses and their objectives place special demands on any future training programme for such teachers. The teacher for these courses needs in addition to the theoretical knowledge an intensive practice in actual production or working situations. He should be conversant with the special methods of teaching vocational subjects in the class-room and also on the shop-floor, laboratories, farms or factories. Apart from planning training programmes for full time teachers, both pre-service and in-service, some concise training packages have to be developed in teach-/ techniques, communication skills, psychology of adolescene and the like for the part-time teacher from the field. One of the objective of the vocationalised courses is to emphasize the aspect of self employment and enterpreneurship. Therefore, the teacher training programme has to be so designed that the teachers gain competence to instill in their students the qualities of enterpreneurship, risk-taking and self confidence so that a large number of students think of starting their own ventures. Hence, the curriculum of such training should include this aspect of self employment an enterprenourship.

Another factor contributing to the difficult and stupendous task is the fact that although post-graduate by and large are available for vocations in the areas of Agriculture and commerce their suitability for teaching such courses is doubtful because of the academic nature of their university education. Hence, before absorption as vocational teachers they need intensive short term practical training preferably in real life situations. This therefore, adds a new dimension to any future training programme. Again it is less likely that that any M.B.B.S. of B.E./M.E. will be available for teaching vocational course. Therefore, specially designed courses of two year duration for graduates/diploma holders and four year duration for higher secondary students having a flair for teaching, may be though of which should include relevant educational component with training in specific skills with major emphasis on the doing aspect of it, for providing a continuous flow of vocational teachers for the programme.

It is evident from the foregoing that the role of teachers is crucial to the process of iplementation. A key element in the training of vocational teachers should be a positive attitude of mind toward practical work and handling of typical field problems. In other words, the specific component of this training programme should purposefully geared to the attitudinal development of the student-teachers towards the aims and objectives of the scheme of vocationalization and its philosophy. Another important point to be borne in mind while preparing a teacher training programme, particularly for the full-time teachers, is that of the changing nature of vocational courses due to change in the job pattern. The whole programme needs to be so designed that the teachers-to-be is able to adjust to these changing demands with minimum effort and training. Of course, such adjustment is possible only in one broad family of vocations. In the absence of such an inbuilt flexibility the full time teachers degenerate into a liability rather than be an asset to the institution.

Another point to be borne in mind is that the whole programme cannot depend on part-time teachers alone. This is because of the fact that their continuous availability is not only uncertain but at times difficult too. Therefore, it will be wise to gradually replace the part timers by specially qualified teachers as a long term strategy.

Finally, the problem of training vocational te
immediate attention because of its magnitude i
the present enrolment of students to these cou
around 81000 in six States.

It can rightly be expected that this number will rise in the years to come. Even at the present figure, taking teacher pupil ratio as 1 : 10, the requirement of teachers is about 8100. Five years later the requirement may swell to 10000 teachers. Such a large number of teacher, in all proba cannot be attracted from experienced or professional people from the field. Therefore, the teaching force has to be largely supplemented by training people from the teacher training programmes.

Thus pre-service programmes for freshers, short term training programmes including in-plant training, wherever possible and periodical refresher courses for in-service teachers and package training programmes for part timers should become a regular feature to form a well connected net work for sustaining and advancing the scheme towards its desired goal - scheme which has no alternative if the country wants to make rapid progress and effectively utilize its enormous manpower potential for productive pursuits.

NATIONAL SEMINAR - ISSUES AND RECOMMENDATIONS:

National Seminar on Vocationalisation of Education which was held from 9th to 11th December, 1981 focussed its attention on issues relating to teachers' selection, training and emoluments. The seminar noted that the salary scales and qualifications of teachers varied a great deal from State to State. The seminar noted that different States have employed teachers from different categories such as the teachers of multipurpose scheme, the teachers of bifurcated courses, making use of the existing teachers, appointing fresh graduates etc., for teaching the vocational courses. The seminar also noted that the qualifications and salary scales need modification in different States to accommodate professionals for para-medical, technical and other courses. In view of the above the seminar recommended that the qualification and salary scales for vocational teachers should be given due consideration by the States and that the persons with good practical background may be posted in the PGT scales.

The seminar noted that the provisio time teachers
was not a passing phase since the
keep on placing demands for the
personnel in the community for
The Seminar, therefore recommended
time teachers their communication
due consideration

The Seminar noted that many institutions such as ITI's, TTTI's, para-medical institutions have workshops and suitable training facilities which may be appropriate and adequate for the in-service training of vocational teachers.

The seminar also noted that although all previous documents have emphasised the pre and in-service training of teachers the efforts in this direction so far have remained inversely proportional to the force with which the recommendations were made. In this regard the Seminar further observed that most of the States which have introduced vocationalisation have not designed any programme for the in-service training of their teachers. The seminar noted that NCERT has conducted a number of short-term teachers training courses for vocational teachers in different States on their request but observed that some States have not yet made use of the training programmes offered by the NCERT. The Seminar recorded that for pre-service training of teachers no steps have so far been initiated either by the State Governments of by the Central Agencies.

The Seminar considered the submission of the Regional College of Education (R.C.E.), Bhopal that the college has planned a post graduate courses in Commerce for preparing vocational commerce teacher and that the introduction of the course is under consideration of the Council. It was also noted that there is a proposal for R.C.E.R., Ajmer for a similar course in Agricultur

8. EVALUATION OF STUDENTS' PROGRESS IN VOCATIONAL SUBJECTS

One of the most important responsibilities of vocational teachers is that of testing students progress and evaluating the effectiveness of training programme. Evaluation is the process of determining how much progress, if any, students are making towards the achievement of goal set for them in a course. The main purpose of evaluation is to form the basis for remedial instruction. Vocational education is a skill area and teachers should be most concerned with discovering the strength and weakness of the learners. Then these students should be given the opportunity to change their habits or to learn what has not been learned.

Evaluation in vocational education is designed to serve one or more of the following purposes:

(1) To diagnose students weaknesses and provide data for remedial teaching.

(2) To measure students achievement in terms of the objectives of the course.

(3) To serve as a basis for determining grade for administrative purposes.

(4) To motivate students to maximum effort.

(5) To determine the extent to which students meet vocational standards.

(6) To evaluate the effectiveness of teaching.

In the absence of this a vocational student cannot become an efficient and effective worker. This aspect has to be given due importance as this is the most important aspect in a vocational education programme. The teacher has to see that the students have developed vocational skills e.g. sustematic and orderly work habits, economy of time and resources, and quality of job including the finish. Extra ordinary abilities of the students have also be judged. The behavioural changes in the student to be judged are - he can produce articles of innovations in his area of work, he experiments with methods leading to better results and he can produce an article of better utility and higher sale value within a reasonable time.

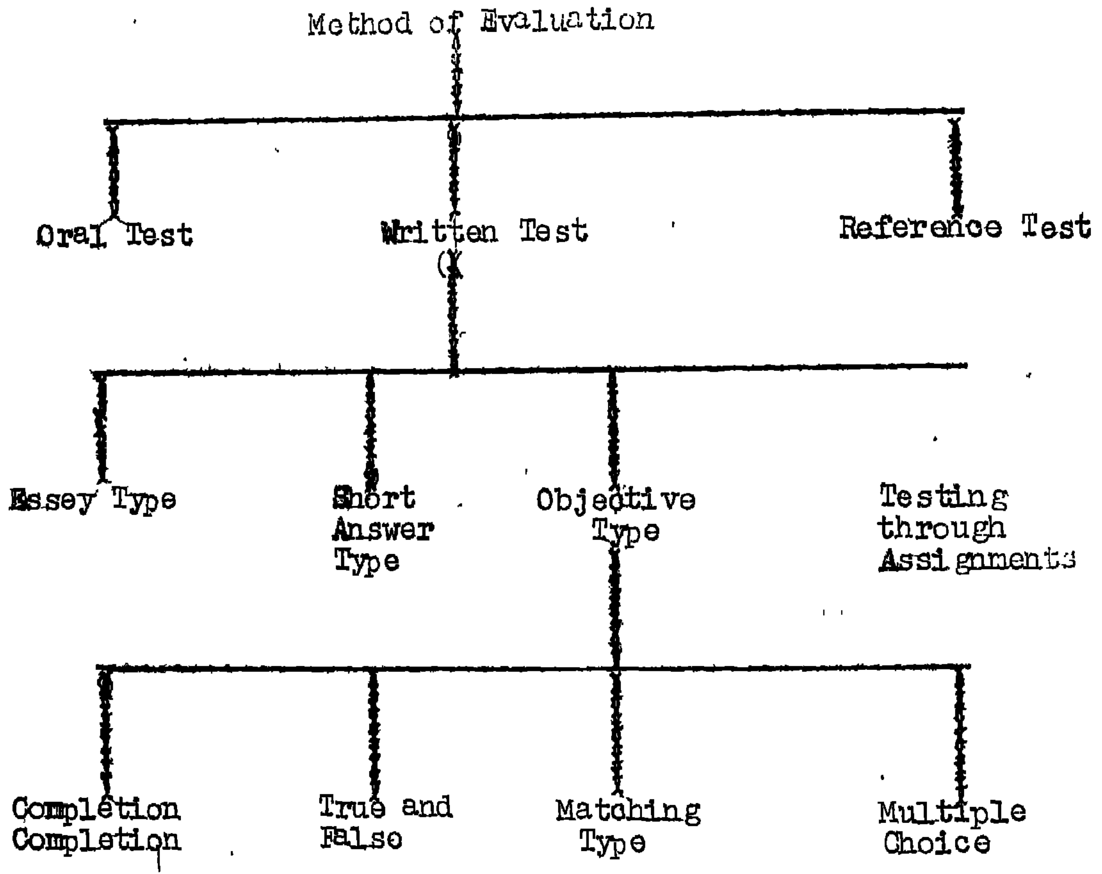
Certain personality traits are very much needed in developing manipulative skills. A skilled worker is required to possess those qualities like good work habits, diligence and perseverance, cooperative attitude, ability to communicate, punctuality, ability to take risk, quick decision, intelligently performing the job, initiative, planning in advance, etc. While evaluating the students' progress at the end of the year these aspects are to be taken into consideration and should be given proper weightage.

The total vocational education programme is to be completed through a number of operational stages and each stage has

Evaluation in a vocational education programme should be continuous. A variety of devices and techniques should be used to get a complete picture of progress. Evaluation in vocational education can not be done just be testing the students at the end of a course of instruction. The changes occur over a period of time and therefore no single appraisan can tell us completely of the change. It is necessary to determine the status of a student at the starting point and then evaluation has to be made a periodical intervals.

One of the more important types of tests involving both subjective and objective measurement in vocational education is the comprehensive test. This test includes oral questioning, written work and practical performance. It is designed to measure the ability to handle tools and materials in a workmanlike manner. Speed and accuracy are also measure. The oral part of the test is designed to reveal interests and attitudes towards the vocation. The written examination is used to measure the individual's familiarity with information of the area concerned. Written tests may be of four types-essey type, short-answer type, objective type and testing through assignments. A particular type cannot be said as the best - A judicious combination of the above mentioned types of tests should find a place in the written examinations. The practical test is used to measure the degree of skill acquired by the students in the vocation.

In this way we see that there are various methods of evaluation available to the vocational education teacher for measuring of students progress. Some important types of evaluation methods may be classified as follows:-



Class tests and records must be treated systematically if they are to be of service to the teacher. Certain records are of course, a compulsory part of the teacher's school duties. Successful vocational education instruction is dependent partly upon the teacher's ability to creat and maintain interest in the subject. For this purpose, and also for the purpose of providing guidance to the teacher periodical class tests should be introduced

Moreover, it is imperative that students work with a clear kn knowlege of what they are doing, of their progress, and of their individual standard in relation to the general standard of the class.

An annual plan of evaluation may be prepared. A test has to be conducted after every operational stage of the vocational course and also on its full completion. Once the plan of action has been put into operation, the work may be controlled mainly by the use of progress chart.

SPECIMEN PROGRESS CHART

Class.............. Voc. Subject............... Term..........

Student's Name	Grades in WEEKLY ASSIGNMENTS							
	1	2	3	4	5	6	7	final

Entry is made on this chart after every test. The chart is divided into the number of weekly assignments the student is required to complete throughout the term and to each week is allotted one set of work to be completed. The chart indicates the progress made with these numbered sets of work. If a student has failed to complete the work or has been absent, this fact is desclosed, and he is not passed on to the next set. A final grade for each student may be calculated with the help of above chart.

For evaluating the student's progress in a vocational subject the work area has to be divided into various workable units and after the completion of each unit a test should be organised to assess the relevant skill of the student. For example, a course in "Sewing" may be divided into various units like -- using sewing machine, stitching - straight and curved, hand sewing, making simple garments, cutting out the garments, making the fitting of a dress and altering the dress. Suppose if each unit has to be completed in one month then at the end of the first month the first unit of the course has to be evaluated, during second month second unit and so on. In the end of the course overall assessment of the course may be conducted keeping in view the unit-wise progress of the students.

The following grading scheme may be used:

For scores	81 - 100%	Excellent	A
	61 - 80%	Good	B
	41 - 60%	Fair	C
	21 - 40%	Average	D
	0 - 20%	Poor	E

An assessment plan should be drawn up for each unit. This is a statement of the methods to be adopted in assigning the performance of a student in a unit. This will relate directly the assessment specification by indicating how the various categories of skills are to be assessed. One example of such assessment plan is given here. This is intended as guidance only and schools may be encouraged to formulate their own assessment plans. A typical assessment plan for a unit might be as follows:

SUBJECT: --

UNIT : --

Unit Topic Area	% of Total Assessment		Assessment Method	% Weightage
A	Knowledge and understanding	Skill	Oral/Short Answer/ objective	20
A	6	14		
B	6	4	Performance test oral	10
C	5	20	" "	25
D	2	8	" "	10
E	5	10	" "	15
F	2	8	" "	10
G	3	7	" "	10
	29	71		100

The vocational skills can be tested continuously through organization of periodical tests and observation of the students' work. At the initial stage technique check shoot may be used to judge the students' ability to work. The product of the student may be judged by more than one teacher separately and average of the marks may be recorded as grades.

It is expected that in evaluation of students performance paramount importance should be given to skill development. This will have to be reflected in fixing the weightages.

Suggested weightages may be:

1.	Knowledge and Understanding	15%
2.	Attainment in Skill	50%
3.	Extra Proficiency in Skill	10%
4.	Dignity of Labour	10%
5.	Initiative	5%
6.	Planning in advance	5%
7.	Cooperative Attitude	5%

A good test in a skill subject should be easy to score. It should allow the use of key marking so that all the essential features of an expert forformance are checked more or less automatically and without subjectivity. This saves a great deal of time and simplifies the work of the evaluator.

While conducting a test at the time of performing the skill by the students a great deal of attention should be given to proper technique, i.e., proper techniques of performing the skill. The evaluator may prepare a technique check sheet for rating the excellence of student techniques and some criteria may also be decided for awarding grades of marks.

The main features of all expert performances are – (1) A steady and uniform flow of motion. (2) Easy and economical movements, (3) Relaxed performance, (4) Concentration upon the task and (5) Intelligent use of the senses. Award 'A' in all the five qualities are in existance, 'B' if four qualities are there, 'C' for three qualities and so on. Automatization is the goal of the skills course because the test of any skill is the ability to sue it. Mastery is said to be achieved when the skill can be exercised quickly without giving much attention to it. Therefore, the chief characteristic of perfect mastery in a particular skill may be identified and the marking scheme/grading scheme should be prepared accordingly.

An example of technique check sheet is given below:

TECHNIQUE CHECK SHEET

	Superior	3 Points
Rating:	Satisfactory	2 points
	Needs improvement	1 point

First characteristic of a good performance -------

Second characteristic of a good performance ------

Third characteristic of a good performance -------

Fourth characteristic of a good performance ------

Fifth characteristic of a good performance -------

Note: It is suggested that 12 or more points be required for a grade A, 10-11 points for a B, 7-9 points for a C, and 3-6 points for a D.

In evaluating a finished product also similar variables may be identified e.g. 'A' may be awarded if the article is saleable with higher price, 'B' if saleable on market price, 'C' if saleable with lower than market price, 'D' if the article is not saleable but useable and 'E' if the article is neither saleable for useable.

In the case of service type of jobs similar technique may be adopted e.g. 'A' may be awarded if the performance is excellent or one of the best, 'B' if it is very good but not the best, 'C' just tolerable, 'D' inferior and 'E' for no good or useless.

Vocational subject being predominantly practice oriented, the weightage to the theory basic to the vocational practice may not exceed 25% of the total weightage given to the vocation in any case.

The ultimate assessment in a particular vocational course will be an average of the entries made in the record.

CUMULATIVE RECORD CARD:

Apart from teacher's record, each student may be asked to maintain cumulative record card. The students should make necessary entries in the card with the help of the teacher after completing every unit. In the end, the, the teacher should also record his observations on the same card in the olumn provided for this purpose. A suggested proforma for a cumulative record card is given below:

1. Name of the student ....
2. Class ....
3. Vocational, subject ....
4. Unit ....
5. Unit started on ....
6. Unit completed on ....
7. List of tools and equipment use ....
   (with specifications & size) ....
8. Raw materials used ....
9. Difficulties faced ....
10. Suggestopns fpr o,provement by the student ....
11. Cost of Production ....
12. Different uses of the finished product ....

13. Next stage after this unit ....

14. Teacher's observation on the following: (In ABCDE grade)

Time taken ....

Use of tools ....

Use of material and Wastage ....

Finish ....

Discipline and group cooperation ....

Safe work habits ....

Utility of the product ....

Personal traints of the student ....

A well finished product should be evaluated as first rate; but if the time, energy and money put into its production are excessively high, the student's performance should rated as low. A well turned out product with minimum inputs of time, labour and money but maximum inputs of imagination, originality, precision and persistance on the student's part will give him a high rating on his performance.

The evaluation records should be simple so that they may not consume the time of the pupils and teacher in lengthy paper-work. The tests for each unit should be part and parcel of that unit.

CRITERIA FOR EVALUATING ACHIEVEMENT OF VOCATIONAL STUDENTS

Area of evaluation	Weightage	Mode of evaluation	Tools of evaluation
Cognitive Knowlege Understanding	25%	Oral test Written test	Test items Written assignment
Affictive Good work habits Planning in advance Dignity of labour Initiative and interest in Commitment Attendance Extra proficiency in skill Cooperative attitude	25%	Observation	Checks list for Self-evaluation Teacher's evaluation Community's evaluation
Psychometer Attainment in skill use of tools mani-pulation of material Finish Body Posture Avoidance of wastage (time and resources)	60%	Observation Performance Test	Checklists for Self-evaluation Teacher's evaluation Community's evaluation Record

9. Students' Future - Vertical Mobility, Apprenticeship, Recognition and Employment

PART - A

The question of vertical mobility, recognition and equivalence of courses, proper apprenticeship provisions employment etc. have been viewed with considerable concern since the NCERT document "Higher Secondary Education and Its Vocationalization" was published. The document states "Another issue to be grapled with at this stage is the establishment of equivalence among vocational diploma and certificates issued by various agencies and according recognition for the purpose of training and employment. This is the appropriate sphere of work for the National Council of Vocational Education". In the Review Committee Report 'Learning to Do', the questions of apprenticeship, recruitment policy and vertical mobility where given detailed considerations. The relevant portions of the report are reproduced below:

"5.9 Apprenticeship and Recruitment Policy:

5.9.1. Apprenticeship facilities should be extended to all the students who complete education in vocational streams if they desire to benefit from such training. Suitable rebates of training should be worked out, taking into account the content of the curricula, depth of knowledge and the levels of skill competence. This will have considerable influence on those who have joined the vocational streams at present, and are doubtful about the extension of this facility.

5.9.2. The largest proportion of the working force belongs to the middle level employment, whether it be in the agriculture/agro or other industries or in trade and business or hospitals. An analysis of various advertisements for a variety of jobs (see Madras Institute of Development Studies publication, Educational Profile of jobs in Tamil Nadu) indicates that about 80 per cent of them prescribe university degrees as essential qualifications, irrespective of the needs and requirements of the job. Most of these positions in fact do not need university degree skills. What is needed often is adequate skills and proficiency to perform duties efficienty and this required proficiency can bessecured through suitable vocational training without a university education. It is recommended that the recruitment policy of the Government as well as public sector organisations should be revised and job requirements should replace the university degree as essential qualifications. Vocationally qualified persons should so be preferred to graduates as long as the jobs performed are the same or similar. Also such persons should be eligible for the higher positions in the ladder, either on the basis of departmental tests or improvement of qualifications through correspondence or evening courses or blacktime training.

5.10.6 Vertical Mobility

5.10.1 The recommended apprenticeship and recruitment policy are part of package recommended to improve the prospects of the majority of those who enter the plus 2 stage and terminate their formal schooling after acquiring some vocational skills. The vocational courses should not be a dead-end themselves. For those who wish to continue and improve their qualifications there should be a provision for allowing them admission to the 2nd year of the Agricultural Universities or the 3rd year of the polytechnics or of nursing colleges and other such institutions where admission requirements is a ten-year school pass. For admission to the related professional course, it would encourage vocationalization if at least there is a provision to enable the vocational class XII leavers to seek admission to the professional courses after the person has acquired actual job experience of three years or more. This is the practice already followed in some institutions, such as the Indian Institute of Management, and may be followed profitably by other professional institutions of higher learning. The curriculum and the structure of courses of the professional institutions - especially for the first year of the course - will have to be reformulated in such a way that there is a provision for special coaching of the students who come from the job experience, to make up the deficiencies of students who have pursued vocational courses and wish to pursue higher courses of study.

In Class XI also students who have completed their studies in vocational or Junior Technical Schools and ITIs should be accepted for admission. Package pre-requisite courses should be drawn up to counter deficiencies of such students entering Class XI and XII.

5.10.2. In relation to these taking vocational agricultural and related courses, some of the suggestions for making them attractive to students include:

i) The product of vocational agricultural schools should be given preference in admissions in Agriculture Colleges/Universities, as noted earlier.

ii) The certificate awarded by the Beard at the end of Class XII should be considered at per with the Agriculture diploma for instance given by the U.P. Government and other States.

iii) Only certificate holders of these schools should be given licence for starting Agricultural Sciences Clinic or Farmist Shop (similar to the eligibility of diploma/degree holders of Pharmacy for the Cjemist Shop). In these clinics they can provide plant protection services, hire, purchase and reparing services of agricultural implements, consultancy, seed and rertilizers and manures, etc.

iv) The product of these schools should be given preference in the allotment of agencies of the National Seeds Corporation and Fertilisers Corporation of India and other bodies.

v) Banks and other financial agencies should grant loans to the products of these schools for self-employment.

vi) They should be considered qualified for the post of Field Assistant, Laboratory Assistant, V.L.W. and other equivalent posts.

vii) Vocational teachers of Agriculture may be given some extra remuneration besides their salary because they have to work before or after school hours every day according to the needs of the farm.

viii) The State Department of Education may encourage setting up of the farm boys and girls organisations, such as the "Future Farmers of India". With the help of such organizations, agricultural leadership may develop among the students taking the vocational course in agriculture.

ix) A school having agriculture in IX and X Classess may be given preference for opening in Agriculture Vocational Courses at the +2 level.

x) Necessary inputs in terms of funds and other facilities may be provided to those schools by the State Government and the Union Government.

xi) Wide publicity may be given through newspape
T.V. and other mass media regarding the scope
objectives of this vocational course. All
wish to get their wards admitted must be
future prospects of this course".

PART - B

The steps taken by a few States, about employment, vertical mobility, recognition etc., which have implemented vocationalization may be summerised as follows:

Andhra Pradesh:

Except those of the para-medical course, the products of all other courses have been permitted vertical mobility by the universities and other professional institutions. The Government is seriously considering the question of providing wage employment to the products in Government Departments and various undertakings. They have appointed sub-committees for various groups of courses to identify jobs in various departments for which vocational products may be made eligible. The respective sub-committees have submitted their reports for the follow up work to the Government.

Delhi:

The students have now been allowed as eligible to enter general courses at the undergraduate level in Delhi Universi... Steps are also being taken to amend the recruitment rules and to provide some % weightage to vocational students in corresponding vocational electives offered under the recently introduced scheme (84-85) approved by the U.G.C.

Karnataka:

Though the universities in the State have provided vertical mobility to general education courses like B.A., B.Com. eyc. only 25% pass out of vocational students are opting for it. The desire to go in for college education is in the urban areas and much less in the rural areas. There was no felt need for planning any bride courses to enable the students to go for higher education. Even at the age of 17, many of the vocational students are capable of engaging themselves in self-employment ventures. This is more pronounced in rural areas. The institutions like Canara Bank have come forward to finance the self-employment schemes presented by the students. The Government has also revised the recruitment rules in regard to those jobs for which vocational students have been trainined.

The NCERT study on "Post-secondary pursuit of the students of vocational spectrum of studies" (Dhote 1983) has brought out clearly the prospects of vocational products for the period 1979 to 1982. Considerably higher percentage (44.4 gainfully employed where as only 29.8% went for education. In the field of employment 13.2% were employed whereas 31.2% were wage-employed. Area can be seen from the table below:

TABLE:- Area-wise Position of Vocational Products in Karnataka (in percent)

*** * *** * *** * ***

Vocational Area	Employment	Higher Education
Para medical *	74.0	14.5
Home science and Misc.	59.5	20.4
Technical	57.9	27.9
Agriculture	46.3	31.0
Commerce	28.0	37.9

* Hundred Percent of the Vocational products of Medical Laboratory Technician course were gainfully employed setting a welcome trend. Another striking feature is that 66.7% of them were self-employed.

Maharashtra

All the courses have been provided with a scope for vertical mobility and they were not made terminal. The students with an engineering option are given 5% marks as weightage for admission into B.E. and diploma courses. Similarly those with agriculture are also getting a weightage of marks for admission of B.Sc. (Agri.) course.

"Post-secondary pursuit of the students of vocational spectrum of the students" (Dhote 1983) gives a gloomy picture of the vocational products in Maharashtra for the period 1980-82:

Self-employed	0.8%
Wage-employment	2.7%
Total employed	3.5%
Higher Education	59.0%

TABLE: Area-wise position of Vocational Products in Maharashtra (in percent)

*** * *** * **

Vocational area	Employment	Higher Education
Technical	5.6	49.7
Agriculture	3.6	47.2
Commerce	3.4	70.1
Paramedical	Nil	1.6
Home Science	Nil	82.2

Tamil Nadu:

A survey of specific products of the Vocational courses in North Aroote District have been conducted which reveals that 49% of the students have taken up wage employment or self employment, 47% have taken higher education of which 22% opted for professional education. The whereabout of 4% students is nown. There was no problem with universities in terms of their accepting students to provide vertical mobility. In Polytechnics 10% seats, are also reserved for vocational students. Steps are being taken to modify the recruitment rules in consultation with the various departments of the Government.

PART - C:

The National Seminar on Vocationalization of Education (1981) organized by NCERT took stock of the national recommendations, vis-a-vis the progress made in different implementing States as presented above. The special points of emphasis and the recommendations of the Seminar in the context of vertical mobility employment apprenticeship etc. are reproduced below:

"6 Employment, Apprenticeship and Vertical Mobility:

6.1 The Seminar noted that the efforts to provide employment, both wage and self, to the products of vocationalstream has not been systematically approached by many of the States.

The Seminar also noted that only in some situations a few steps have been taken to modify the recruitment rules, and to delink the degrees with certain jobs. Further, the question of recognition and equivalence of courses also has not been given due consideration which is causing some unpopularity of the scheme amongst the students.

The Seminar therefore, endorsed all the recommendatioms of the "Learning to Do" on all aspects related to employment, apprenticeship and vertical mobility of students. It further recommended that State Directorate concerned with Vocationalization of education should take speedy and effective steps to creat wage employment opportunities, set up agencies to assist an guide in self-employment ventures, delinking of degrees with certain type of jobs, review and revise the recruitment rules, accord recognition and establish equivalence of courses to ensure employment to the products and the success of the programme.

6.12 The Seminar felt that the question of vertical mobility of students in their chosen vocations is not being interpreted in its proper perspective. In this regard the Seminar was of the opinion that while ensuring vertical mobility, the mobility of the students in their own vocational areas should be ensured rather than entry into the general courses at the degree level.

Therefore, the Seminar recommended that the State Directorate should take up the matter with the universities in their States. Further, the UGC should also take necessary steps to expedite action on this.

The Seminar also resolved that for admission into such courses the vocational products of the higher secondary stage should be preferred.

The Seminar felt that the expansion of the Trade Apprenticeship facilities to the products of the vocational stream was a welcome decision but stressed that much more may have to be done since the vocational students are in a class by themselves, much different than the candidates for the Trade Apprenticeship.

The Seminar noted that not much has been done about the extension of Technician Apprenticeship for the Vocational products, though the rules permit it.

The Seminar, therefore strongly recommended that further steps should be taken to extend the Technician Apprenticeship to the vocational products as permitted by the rules at prewent.

It further recommended that suitable legislation may be formulated and introduced, if necessary, to extend proper apprenticeship training to vocational students, even if it has to be of a distinct type, since this will ensure better chances of success for the school vocational education meet its stipulated aims and goals.

The Seminar was concerned about the public demands from the parents and the students for entry into the institutions of general education. Such demands are often made regardless of the merit of the students and the option of the vocational courses is used as a leverage to provide some special paths for such an end. The Seminar felt that often such demands are not inconfirmity with the expected goals or vocationalization of education.

The Seminar, therefore, recommended that public demands for entry of vocational students into colleges, professional institutions through reservation of seats and false incentives should be carefully screened vis-a-vis the aims of vocationalization of education before being acceded to. Any move which may seem to be contrary to the stipulated goals of the Indian Education Commission and other policy resolutions may be carefully avoided."

Since then the Central Apprenticeship has resolved to suitably amend the Apprentices Act (1961) so as to provide for the vocational students as a sub-group of the technician apprenticeship.

As an interim measure the Ministry of Education and culture has launched a Special Vocationalised Education Training Scheme to cover 6000 vocational products throughout the country. Each apprentice under this scheme is awarded a stipend of Rs.200/- p.m. for a duration of 6 months.

The scheme which is implemented through four regional Apprentice aims at the unharcement of employability of vocational students. The following vocational have been covered under this scheme.

1. Accountancy and Auditing
2. Banking
3. Marketing and Salesmanship
4. Food Preservation
5. Bakery and Confectionery
6. Poultry farming
7. Fisheries/Fish processing etc.
8. Dairying
9. Medical Laboratory Technology/Assistants
10. Health worker/Nursing
11. Child care and Nutrition
12. Electrical Motor winding/appliance servicing
13. Electrical wiring/contracting

14. Automobile servicing
15. Crop cultivation/production
16. Sericulture/Apiculture
17. Horticulture/Floriculture
18. Plant protection
19. Office Secretaryship

It may also be added that the question of recognition, equivalence or employment has not been given the due attention that was called for since the National Council of Vocational Education which was initially proposed to take care of these aspects could never be established. The issues are further complicated due to the fact that there are a number of important and statutory bodies which govern and regulate vocational education and training in various areas. These are National Council of Vocational Training. All India Council of Technical Education, Dental Council of India, Pharmacy Council of India, All India Nursing Council, I.C.A.R. etc. Their inability to come together and solve the problems through a common platform has resulted into serious set-back in the progress of vocationalizati n, the particular reference to these issues which concerned the future of students. However, the work that has been initiated by the various State Governments and the progress made in a rather short span of time is commandable and may be viewed as the pointer to future developments and the silver linking of the clouds in this important sphare.

The National Seminar on Vocationalization of Education (1984) has made the following recommendations to reinforce the earlier recommendations and to expedite progress in this area:

- "Proper linkage of vocational education at +2 level with higher courses in corresponding vocations should be established through collaboration with system of professional and higher learning like degree vocational courses in general colleges, agricultural universities, ICAR institutions, Central Silk Board, Dental/Pharmacy/ Nursing Councils, Engineering Colleges, Institute of Chartered Accountant, Institute of Company Secretariat, Polytechnics etc."
- "For skill oriented jobs more weightage should be given on the skill proficiency rather than the formal degree as the requirement qualifications".
- "Actions should be initiated to develop entrepreneurial ability and special stress may be laid in training students for self-employment and Particularly employment in the rural sector".